A Systematic Review of Functional Requirements, Modelling Practices, and Validation Strategies in IoT Application Development

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***Abstract*—The rapid development of the Internet of Things (IoT) requires systematic development methods that address complex functional, architectural, and validation concerns. This review synthesized research published between 2016 and 2023 to characterize common functional requirements (FRs), current modelling techniques, and validation practices. From an initial corpus of 1,598 articles, 425 publications were selected for in-depth analysis. The results demonstrated a consistent emphasis on data handling, inter-device communication, analytics, and system management. Nevertheless, critical gaps persisted in end-to-end security and context-aware computing. Sequence, class, and use case diagrams dominated modelling practices, which indicated attention to system behavior and interactions. Conversely, state machine and deployment diagrams were underutilized despite their potential to better capture runtime states and architectural configurations. The validation approaches in IoT development were primarily empirical, with experiments and case studies predominating. Expert reviews are valuable for early-stage assessment, but were rarely applied, which indicated missed opportunities for early improvement of design quality in the lifecycle. Overall, the results reflected the maturity and limitations of current practices in IoT engineering. These limitations can be addressed by diversifying modelling techniques, enhancing security integration, and using hybrid validation frameworks. This review presented a foundational reference to guide the systematic development of scalable, secure, and context-aware IoT systems, and contributed to the evolving body of IoT software engineering knowledge.**

***Keywords*—Functional requirements; Unified Modeling Language; validation; Internet of Things; systematic review**

I. Introduction

The Internet of Things (IoT) represents a significant technological advancement that enables the interconnection of physical devices equipped with sensors and communication interfaces capable of data exchange across a network. This transformation of physical systems into smart environments has led to the emergence of complex systems that require rigorous requirements engineering (RE) practices to ensure successful IoT application development and deployment [1], [2]. The diverse hardware, software, and communication protocols requires a comprehensive understanding of functional requirements (FRs), which define the essential behaviors, capabilities, and services an IoT system must deliver to reliably meet stakeholder expectations across varying operational contexts [3], [4].

The literature determining the essential FRs in IoT has classified them into thematic groups crucial to the success of the system. The main themes include service discovery and orchestration, device management and security, communication and data management, and context-aware features [3], [5]. The theme-based organization aids developers and stakeholders in addressing the multifaceted integration challenges presented by heterogeneous elements of the system systematically [6], [7]. Several applications in IoT do not systematically define these FRs, which results in errors that could negatively affect user satisfaction and system performance [4], [8].

Modelling is essential in the RE process. Unified Modelling Language (UML) is effective for demonstrating IoT system functionalities and presents a visual representation that enables developer and stakeholder communication [9]. The UML adaptations through the IoTReq extension improve its pertinence in addressing the specific challenges that characterize IoT environments, such as distributed control, heterogeneity, and context-awareness [8], [10]. These modelling approaches are essential to ensure that the FRs defined are captured and understood adequately before a system is implemented.

The FR validation is critical in the lifecycle of IoT system development. The designed systems are confirmed to perform as planned in their chosen contexts through experimental prototypes, simulations, and expert evaluations [11], [12]. Each approach is subject to compromises concerning generalizability and empirical rigor and thereby requires a carefully personalized approach to address specific IoT application situations [13], [14]. The process of validation confirms functional adherence and identifies possible areas for enhancement, thus encouraging the continuous improvement of IoT applications.

This systematic review charts the present landscape of FRs in IoT development and reveals underexplored areas. This review presents actionable observations to create stronger and

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more adaptable IoT systems that can meet the evolving requirements of varied application areas. Sustained focus on the definition, modelling, and validation of FR will be essential in addressing IoT complexities and fully realizing its potential.

II. METHODS

A. Research Questions

This study was organized in three research questions (RQs) to guide the investigation. The RQs provided a structured framework to examine which functional requirements are prioritized in existing research, and how they are modelled and validated within the IoT context. Table I summarizes the RQs and their underlying motivations and highlights their importance to the overall study objectives.

TABLE I. THE RESEARCH QUESTIONS AND MOTIVATIONS

Research Question	*Motivation*
RQ1: What are the common FRs in IoT application development?	This question aims to analyze the distribution of studies regarding the FRs addressed in IoT development. The study aimed to determine to which these identified FRs have been practically applied and integrated into IoT development, which highlights their practical application and relevance within the field.
RQ2: Which UML models are most used for modelling FRs in the development of IoT applications?	The answer to RQ2 would facilitate the identification of the UML diagrams adopted to support the FRs of IoT applications. The answer would also aid the identification of the approaches that have gained IoT development practitioners' attention and assessment of its effectiveness in representing the FRs of IoT projects.
RQ3: What are the strategies applied in IoT FR validation?	To identify the validation methodologies used for verifying the FRs in IoT projects.

B. Literature Search Strategy

The literature was searched using the Web of Science, Scopus, and IEEE Xplore databases. The search targeted titles, keywords, and abstracts, and applied a consistent set of search terms across all databases: ("Internet of Things" OR "IoT") AND ("functional requirement" OR "requirements model" OR "UML" OR "Unified Modelling Language") AND ("validation" OR "verification" OR "evaluation"). The search was limited to articles published between January 2016 and December 2023.

C. Inclusion and Exclusion Criteria

Rigor and relevance in the study selection were ensured by applying specific inclusion and exclusion criteria.

1) Inclusion criteria: Studies were considered eligible for inclusion if they satisfied the following conditions:

- Publication date: Published between January 2016 and December 2023;
- Database: Indexed in Web of Science, Scopus, or IEEE Xplore;
- Topic relevance: Addressed the IoT in the context of FR or UML, and discussed aspects of validation or verification related to these requirements or models;
- Search scope: Appeared in titles, abstracts, or keywords containing the defined search terms;
- Publication type: Peer-reviewed journal articles, conference papers, or book chapters;
- Language: Published in English to maintain interpretation and analysis consistency.

2) Exclusion criteria: Studies were excluded from this review if they met any of the following conditions:

- Publication date outside range: Published before January 2016 or after December 2023;
- Non-relevant focus: Addressed IoT broadly but did not cover FRs, UML, validation, or verification;
- Publication type: Editorials, opinion pieces, prefaces, tutorials, theses, patents, standards documents, or grey literature and any non-peer-reviewed publications;
- Language: Not published in English;
- Accessibility: Full text was unavailable.

D. Study Selection

The studies were selected in accordance with the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines [15] (see Fig. 1).

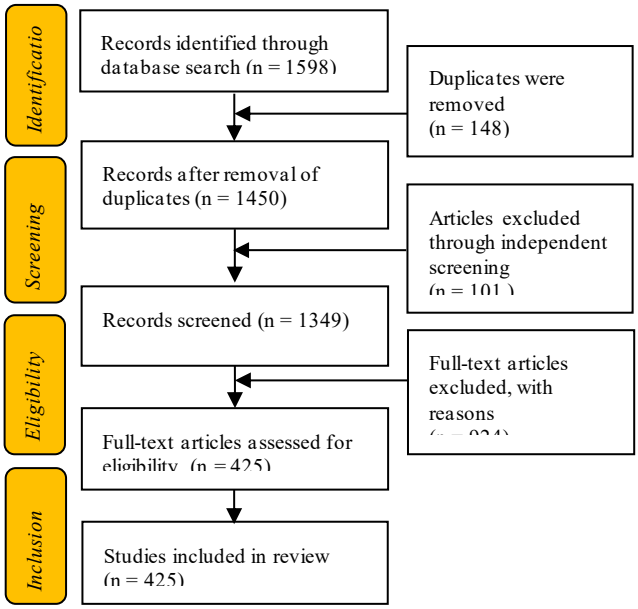

Fig. 1. Flowchart of research process adapted from PRISMA diagram (adapted from [15]).

The process included identification (search results were imported into a reference management tool and duplicates were removed), screening (titles, abstracts, and keywords were reviewed for relevance), eligibility (full-text articles were assessed based on predefined inclusion and exclusion criteria), and inclusion (studies meeting all criteria were selected for final analysis and synthesis). Overall, the database search identified a total of 1,598 publications. After screening, 425 publications were selected and included in the systematic

literature review. Supplementary table (Table II) presents the complete list of included studies.

III. Results and Discussion

A. RQ1: What are the Common FRs in IoT Application Development?

Identifying and analyzing common FRs is crucial for the success and efficiency of IoT ecosystems in the IoT application development domain. This study integrated insights from extensive literature and assessed the importance of FRs prevalent in IoT applications. A consensus emerged around 24 FRs, which can be viewed through their occurrence frequencies within the existing body of knowledge (summarized in Fig. 2).

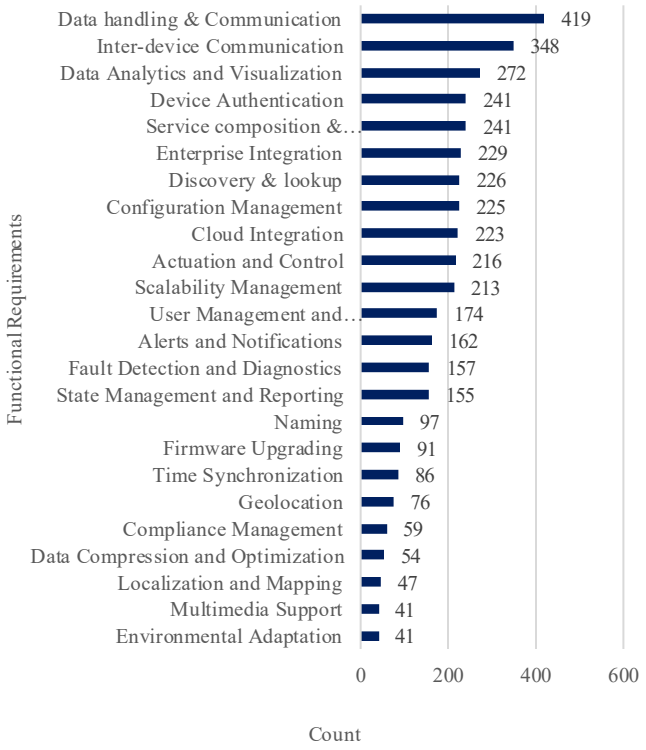

Fig. 2. The FRs of IoT application development.

The foundational FRs of data handling and communication (n = 419) and inter-device communication (n = 348) highlighted the necessity of robust and reliable connectivity for effective IoT operations. These FRs are essential for enabling seamless data flow and interoperability between IoT devices, cloud platforms, and edge nodes. A comprehensive understanding of these communication frameworks was underscored by the requirement for effective data sharing protocols, which was supported by research that emphasized the important role of integrated communication systems and data management in IoT architectures [16]–[18]. Evidently, the prevailing emphasis on communication reflected the fundamental characteristics of IoT systems, whose functionality relies on interconnectedness.

Interoperability and integration requirements, such as service composition and programmability (n = 241), enterprise integration (n = 229), and cloud integration (n = 223), emphasized the need for IoT applications to adapt and operate within heterogeneous environments. This result supported the shift towards more service-oriented architectures within IoT ecosystems. Effective service discovery and integration mechanisms are vital for dynamic integration into existing enterprise systems, and much research supported the necessity of such adaptive frameworks to enhance IoT solution scalability and flexibility [16], [17]. A key priority in the literature was device capacity to effectively communicate and cooperate while autonomously discovering and integrating services.

Data analytics and visualization (n = 272) emerged as a critical requirement that facilitates the conversion of raw data into actionable insights. The prominence of this FR in the literature underscored the integration of advanced analytical capabilities with IoT systems, where artificial intelligence can significantly enhance operational efficiency and decision-making processes [19]–[21]. This result highlighted the trend towards leveraging big data analytics within IoT applications to identify trends and patterns that drive system intelligence.

Actuation and control (n = 216) bridged the gap between data analysis and physical responses in IoT systems. This FR is integral in automated environments, where real-time data processing translates directly into physical actions, thus facilitating interaction with the environment [22], [23]. The importance of such operational management capabilities is correlated with their deployment in important sectors, such as healthcare, smart cities, and industrial operations, where timely responses are dominant.

The emphasis on fleet-level operational management revealed additional significant FRs that included configuration management (n = 225) and scalability management (n = 213). These FRs emphasize the systemic requirements for managing devices over their lifecycle effectively. As IoT technologies mature, device network management collectively becomes essential to ensure reliability and efficiency against potential systemic failures. Given that IoT devices are increasing exponentially, methods for ensuring system observability and maintainability are becoming increasingly important [24], [25].

Regarding security, device authentication (n = 241) and user management and authentication (n = 174) were comparatively well represented, but the shortcomings in other security mechanisms, such as encryption and intrusion detection, highlighted significant gaps in comprehensive security approaches across the IoT landscape [26]–[28]. This imbalance indicated a persistent need for research to evolve toward developing robust, multi-layered security frameworks for IoT environments.

Lastly, several FRs related to context-awareness and optimization, such as geolocation (n = 76) and environmental adaptation (n = 41), were under-represented, which suggested that substantial potential for growth in these domains remains as the IoT ecosystem evolves. Addressing these unfilled niches can enhance the overall functionality of IoT solutions by

tailoring them more closely to the intricacies of application-specific requirements.

The FR analysis revealed a focus on IoT system connectivity, interoperability, analytics, and management. Furthermore, the analyses identified important areas that should be explored further, specifically in security and domain-specific applications. Addressing these shortcomings, particularly in developing comprehensive security strategies and enhancing context-aware capabilities, would be instrumental in advancing IoT application development and ensuring its viability in an increasingly interconnected world.

B. RQ2: Which UML Models are most used for Modelling FRs in the Development of IoT Applications?

In the IoT application development context, the analysis indicated a prevalent utilization of specific UML diagrams for modelling functional requirements. The data (see Fig. 3) demonstrated that sequence, class, and use case diagrams were among the most commonly used diagrams, which supported their importance in IoT systems development [29]–[32].

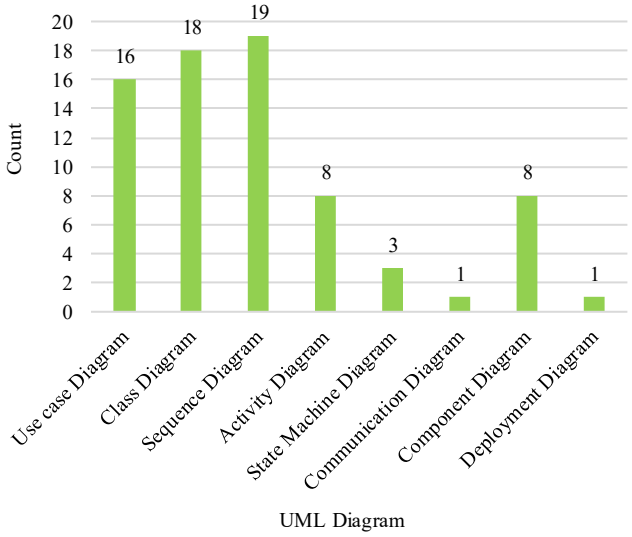

Fig. 3. Frequency of UML models used for modelling FRs in IoT application development.

Sequence diagrams (n = 19) were one of the frequently used modelling tools, and are essential for mapping out time-dependent, message-driven interactions typical within IoT environments. The strength of this diagram is its ability to effectively represent asynchronous communication flows and event-driven IoT systems, which enables a clear depiction of the interaction chain that involves sensors, data processing units, and actuators [29]–[31]. For example, sequence diagrams are visual narrations of the information flow from sensor data capture to cloud processing, and clarify how IoT system components come together in real-time settings [32], [33].

Use case diagrams (n = 16) are effective for capturing functionalities that are user-centric. Such diagrams bridge technical teams and stakeholders, and facilitate a primary comprehension of user interactions and system requirements, especially within smart homes and healthcare domains [29]–[31]. Through this high-level abstraction, stakeholders can articulate and understand the functionalities and purpose of the system more clearly, which ensures that the needs of the user are prioritized in the process of development [29], [30], [32].

The FRs are complemented by class diagrams (n = 18), which articulate the static structure of IoT systems. Class diagrams are influential in defining core objects, such as sensors and actuators, and their characteristics and relations, and act as the foundational design for system implementation in model-driven engineering styles. Integrating class diagrams with use case and sequence diagrams encourages an inclusive perspective of the static framework and dynamic interactions of IoT applications [32], [34], [35].

While the discussion was dominated by the aforementioned diagrams, other UML diagrams [activity diagrams (n = 8) and component diagrams (n = 8)] are also valuable. While activity diagrams were not as widely adopted, they excel in modelling complex workflows, which potentially aids in scenarios involving multi-device interactions or context-aware processes [36][37]. Similarly, component diagrams enhance architectural clarity by defining system decomposition, which is crucial for developing scalable and maintainable IoT solutions [38], [39].

Conversely, the application of state machine diagrams (n = 3), communication diagrams (n = 1), and deployment diagrams (n = 1) was notably limited. This limited application raises concerns about their underutilization despite their potential benefits in representing system states, modularity, and deployment environments. State machine diagrams may be particularly relevant for capturing lifecycle behaviors and reactivity patterns, which are important elements in adaptive IoT applications [40], [41]. The absence of these diagrams indicates a gap in the modelling methodologies that could be corrected by promoting a more diverse usage of UML tools academically and practically [42], [43].

While sequence, use case, and class diagrams are fundamental for articulating functional requirements in IoT applications, a broader adoption of complementary diagrams (activity, component, and state machine diagrams) is required. Researchers and practitioners who bridge this modelling gap can enhance their frameworks and methodologies, ultimately leading to more robust and effective IoT systems.

C. RQ3: What are the Strategies Applied in IoT FR Validation?

The FR validation in IoT application development uses several predominant strategies, which highlight a robust methodological framework in the literature. The analysis (summarized in Fig. 4) revealed that this space was dominated by empirical evaluation techniques, primarily through experiments and case studies, where experiments comprised a significant proportion of the documented methods. This predominance underscored a trend toward validating the performance and behavior metrics of IoT systems in controlled and real-world scenarios, which reflected the necessity of contextually rich data in developing effective IoT applications.

The reliance on experimental methods indicated the emphasis of the IoT community on reproducibility and quantitative performance metrics. Experiments in controlled

environments can precisely measure various system parameters, which include latency, energy consumption, scalability, and interoperability [44], [45]. Such parameters are important given the inherent complexity and dynamic interactions of IoT devices, which operate under diverse and frequently unpredictable conditions [46]. Notably, various empirical analyses demonstrated that prototypes and simulations were frequently used to refine system functionality before deployment. Empirical techniques facilitate continuous integration and iterative development, which align with agile methodologies in software engineering [47].

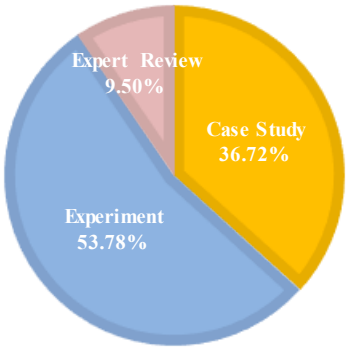

Fig. 4. Strategies used for functional requirement validation in IoT application development.

Case studies provide an enriching contextual lens that enables the validation of IoT FRs. This method allows researchers to embed evaluation efforts within realistic and application-specific environments, such as healthcare and industrial IoT systems [48]. These studies aid the elucidation of domain-specific constraints and user interactions that may be neglected in controlled experiments, thus enhancing the understanding of operational challenges and real-world implications of FRs. Incorporating case studies reflects researchers' awareness of the contextual factors that can influence the success of IoT systems beyond technical validation [49].

Expert reviews comprised a modest proportion of the validation strategies, but have important value, especially in the early stages of requirement elicitation and specification. These reviews aid the identification of ambiguities or inconsistencies within the requirements and contribute to a more thorough validation [50]. Nevertheless, their lower adoption may stem from perceptions of subjectivity and the challenges in assembling a reliable expert panel [51]. Nonetheless, incorporating expert evaluations with empirical approaches can improve validation framework robustness by merging quantitative rigor with qualitative insights [52].

This analysis of present approaches in IoT FR validation revealed that empirical methods were dominant, specifically, experimental approaches that highlight measurable system behaviors, which were accompanied by context-relevant perspectives from case studies and the qualitative contribution from expert appraisals. The evolution of this field demonstrates the clear necessity of frameworks of hybrid validation that simultaneously use the strengths of expert insights and empirical evaluations to develop standardized benchmarks customized to the diverse IoT landscape.

IV. Conclusion and Future Work

This study emphasized the basic trends in IoT application development and focused on FRs, modelling methods, and validation approaches. The analysis suggested that the main focus has been on important capabilities, such as analytics, inter-device communication, data handling, and system-level management. Nonetheless, crucial areas, such as context-awareness and end-to-end security, were notably under-represented, and are important for deployments in the real world. These aforementioned gaps suggest that research priorities are disconnected from operational requirements in the landscape of IoT.

Regarding modelling practices, a clear prevalence of traditional diagram types (sequence and class diagrams) was established, as these diagrams effectively capture functional flows and system structures. Nevertheless, the infrequent use of state machines, deployment, and communication diagrams indicated limitations in the existing modelling frameworks. These diagrams are essential for capturing the full spectrum of functional requirements of IoT applications. Therefore, enhancing modelling practices may be important for addressing architecture-specific challenges and optimizing system resources.

The analysis also revealed that validation strategies within IoT development practices strongly relied on experimental methods and case studies. Although these methods provide valuable empirical insights, incorporating expert reviews, particularly during the early design stages, can strengthen their effectiveness. A combined approach that integrates empirical testing with qualitative assessments can support more holistic evaluations of FRs and system performance.

Future research directions should emphasize the need to expand the focus on FRs, especially in multi-layered security protocols and adaptive computing environments. These elements are vital for supporting advanced applications, such as autonomous systems. Integrating context-aware design practices, coupled with the adoption of modern modelling techniques that can address functional and contextual dynamics, is another promising research direction. Finally, advancing IoT development would rely on the development of adaptive meta-modelling frameworks that can intelligently suggest suitable modelling practices based on system characteristics.

In summary, IoT application development has progressed substantially, but significant operational gaps across FRs, modelling practices, and validation methods remain. Future work should aim to broaden functional scopes, strengthen UML modelling practices, and pioneer advanced validation strategies that promote a more integrated approach to IoT system security and optimization. Addressing these areas would enable researchers and practitioners to better align their efforts with the evolving landscape of IoT technologies and application demands.

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REFERENCES

[1] I. Berrouyne, "CyprIoT project: an open source toolset to model and generate a network of things," Proc. ACM Conference, pp. 1–5, 2020, doi: 10.1145/3417990.3422005.

[2] M. Rana and R. Bo, "IoT-based cyber-physical communication architecture: Challenges and research directions," IET Cyber-Physical Systems: Theory & Applications, vol. 5, no. 1, pp. 25–30, 2019, doi: 10.1049/iet-cps.2019.0028.

[3] C. Perera, M. Barhamgi, A. Bandara, M. Ajmal, B. Price, and B. Nuseibeh, "Designing privacy-aware Internet of Things applications," Information Sciences, vol. 512, pp. 238–257, 2020, doi: 10.1016/j.ins.2019.09.061.

[4] A. Nguyen-Duc, K. Khan, S. Bajwa, and T. Lønnestad, "Minimum viable products for Internet of Things applications: Common pitfalls and practices," Future Internet, vol. 11, no. 2, p. 50, 2019, doi: 10.3390/fi11020050.

[5] R. Hassan, F. Qamar, M. Hasan, A. Aman, and A. Ahmed, "Internet of Things and its applications: A comprehensive survey," Symmetry, vol. 12, no. 10, p. 1674, 2020, doi: 10.3390/sym12101674.

[6] F. Fagroud, L. Ajallouda, E. Benlahmar, A. Zellou, H. Toumi, S. Filali, and Y. Baddi, "Internet of Things search engines: Toward a general architecture," Indonesian Journal of Electrical Engineering and Computer Science, vol. 28, no. 2, pp. 1117–1127, 2022, doi: 10.11591/ijeecs.v28.i2.pp1117-1127.

[7] F. Liang, C. Qian, W. Hatcher, and W. Yu, "Search engine for the Internet of Things: Lessons from web search, vision, and opportunities," IEEE Access, vol. 7, pp. 104673–104691, 2019, doi: 10.1109/ACCESS.2019.2931659.

[8] A. Lekidis and P. Katsaros, "Model-based design of energy-efficient applications for IoT systems," Electronic Proceedings in Theoretical Computer Science, vol. 272, pp. 24–38, 2018, doi: 10.4204/eptcs.272.3.

[9] M. Abadeh, "A semantic axiomatic design for integrity in IoT," Transactions on Emerging Telecommunications Technologies, vol. 35, no. 9, 2024, doi: 10.1002/ett.5032.

[10] K. Küçük, C. Bayılmış, and D. Msongaleli, "Designing real-time IoT system course: Prototyping with cloud platforms, laboratory experiments and term project," International Journal of Electrical Engineering Education, vol. 58, no. 3, pp. 743–772, 2019, doi: 10.1177/0020720919862496.

[11] Z. Li, "Just enough, just in time, just for 'me': Fundamental principles for engineering IoT-native software systems," arXiv preprint arXiv:2201.09931, 2022, doi: 10.48550/arxiv.2201.09931.

[12] M. Hernández, B. Alturki, and S. Reiff-Marganiec, "FABIOT: A flexible agent-based simulation model for IoT environments," Proc. IEEE Cybermatics 2018, pp. 66–73, 2018, doi: 10.1109/Cybermatics_2018.2018.00045.

[13] S. Mondal, P. Jayaraman, P. Haghighi, A. Hassani, and D. Georgakopoulos, "Situation-aware IoT data generation towards performance evaluation of IoT middleware platforms," Sensors, vol. 23, no. 1, p. 7, 2022, doi: 10.3390/s23010007.

[14] H. Korala, D. Georgakopoulos, P. Jayaraman, and A. Yavari, "A time-sensitive IoT data analysis framework," Proc. 54th Hawaii International Conference on System Sciences (HICSS), 2021, doi: 10.24251/HICSS.2021.865.

[15] M. J. Page, J. E. McKenzie, P. M. Bossuyt, I. Boutron, T. C. Hoffmann, C. D. Mulrow, and D. Moher, "The PRISMA 2020 statement: An updated guideline for reporting systematic reviews," BMJ, vol. 372, art. no. n71, 2021, doi: 10.1136/bmj.n71.

[16] A. Khurshid, A. Khan, F. Khan, M. Ali, J. Shuja, and A. Khan, "Secure-CamFlow: A device-oriented security model to assist information flow control systems in cloud environments for IoTs," Concurrency and Computation: Practice and Experience, vol. 31, no. 8, 2018, doi: 10.1002/cpe.4729.

[17] Z. Rehman, N. Tariq, S. Moqurrab, J. Yoo, and G. Srivastava, "Machine learning and Internet of Things applications in enterprise architectures: Solutions, challenges, and open issues," Expert Systems, vol. 41, no. 1, 2023, doi: 10.1111/exsy.13467.

[18] D. Sarabia-Jácome, S. Giménez-Antón, A. Liatifis, E. Grasa, M. Catalán, and D. Pliatsios, "Progressive adoption of RINA in IoT networks: Enhancing scalability and network management via SDN integration," Applied Sciences, vol. 14, no. 6, p. 2300, 2024, doi: 10.3390/app14062300.

[19] J. An, W. Li, F. Gall, E. Kovac, J. Kim, T. Taleb, and J. Song, "EIF: Toward an elastic IoT fog framework for AI services," IEEE Communications Magazine, vol. 57, no. 5, pp. 28–33, 2019, doi: 10.1109/MCOM.2019.1800215.

[20] C. Mouradian, N. Jahromi, and R. Glitho, "NFV and SDN-based distributed IoT gateway for large-scale disaster management," IEEE Internet of Things Journal, vol. 5, no. 5, pp. 4119–4131, 2018, doi: 10.1109/JIOT.2018.2867255.

[21] S. Nasiri, F. Sadoughi, M. Tadayon, and A. Dehnad, "Security requirements of Internet of Things-based healthcare systems: A survey study," Acta Informatica Medica, vol. 27, no. 4, pp. 253–258, 2019, doi: 10.5455/aim.2019.27.253-258.

[22] S. Abedin, M. Alam, S. Kazmi, N. Tran, D. Niyato, and C. Hong, "Resource allocation for ultra-reliable and enhanced mobile broadband IoT applications in fog networks," IEEE Transactions on Communications, vol. 67, no. 1, pp. 489–502, 2019, doi: 10.1109/TCOMM.2018.2870888.

[23] T. Park and W. Saad, "Distributed learning for low-latency machine-type communication in a massive Internet of Things," IEEE Internet of Things Journal, vol. 6, no. 3, pp. 5562–5576, 2019, doi: 10.1109/JIOT.2019.2903832.

[24] T. Heinis, J. Hilario, and M. Meboldt, "Empirical study on innovation motivators and inhibitors of Internet of Things applications for industrial manufacturing enterprises," Journal of Innovation and Entrepreneurship, vol. 7, no. 1, 2018, doi: 10.1186/s13731-018-0090-7.

[25] C. Madalina and A. Petrescu, "IoT modeling for digital enterprises and decision analysis," International Journal of Innovation in the Digital Economy, vol. 15, no. 1, pp. 1–8, 2024, doi: 10.4018/IJIDE.349724.

[26] M. Qutqut, A. Al-Sakran, F. Almasalha, and H. Hassanein, "Comprehensive survey of the IoT open-source OSS," IET Wireless Sensor Systems, vol. 8, no. 6, pp. 323–339, 2018, doi: 10.1049/iet-wss.2018.5033.

[27] H. Son, B. S. Kim, J. Cho, and B. Lee, "ASM: Augmented security module for commercial IoT devices," Tehnički Vjesnik – Technical Gazette, vol. 31, no. 1, 2024, doi: 10.17559/TV-20230608000709.

[28] M. Samaila, J. Sequeiros, T. Simões, M. Freire, and P. Inácio, "IoT-HARPSECA: A framework and roadmap for secure design and development of devices and applications in the IoT space," IEEE Access, vol. 8, pp. 16462–16494, 2020, doi: 10.1109/ACCESS.2020.2965925.

[29] S. Madakam, R. Ramaswamy, and S. Tripathi, "Internet of Things (IoT): A literature review," Journal of Computer and Communications, vol. 3, no. 5, pp. 164–173, 2015, doi: 10.4236/jcc.2015.35021.

[30] R. Lomotey, K. Sofranko, and R. Orji, "Enhancing privacy in wearable IoT through a provenance architecture," Multimodal Technologies and Interaction, vol. 2, no. 2, p. 18, 2018, doi: 10.3390/mti2020018.

[31] M. Hoque and C. Davidson, "Design and implementation of an IoT-based smart home security system," International Journal of Networked and Distributed Computing, vol. 7, no. 2, p. 85, 2019, doi: 10.2991/ijndc.k.190326.004.

[32] T. Nguyễn, D. Min, and E. Choi, "A hierarchical modeling and analysis framework for availability and security quantification of IoT infrastructures," Electronics, vol. 9, no. 1, p. 155, 2020, doi: 10.3390/electronics9010155.

[33] L. Calderoni, A. Magnani, and D. Maio, "IoT Manager: An open-source IoT framework for smart cities," Journal of Systems Architecture, vol. 98, pp. 413–423, 2019, doi: 10.1016/j.sysarc.2019.04.003.

[34] H. Li, K. Ota, and M. Dong, "Learning IoT in edge: Deep learning for the Internet of Things with edge computing," IEEE Network, vol. 32, no. 1, pp. 96–101, 2018, doi: 10.1109/MNET.2018.1700202.

[35] M. Kose and M. Ozkaya, "Towards extending UML's activity diagram for the architectural modeling, analysis, and implementation," Proc. Federated Conference on Computer Science and Information Systems (FedCSIS), vol. 21, pp. 639–648, 2020, doi: 10.15439/2020F199.

[36] Y. Ren, X. Zhang, and G. Lu, "The wireless solution to realize green IoT: Cellular networks with energy-efficient and energy-harvesting schemes," Energies, vol. 13, no. 22, p. 5875, 2020, doi: 10.3390/en13225875.

[37] Z. Shahbazi and Y. Byun, "Improving transactional data systems based on an edge computing–blockchain–machine learning integrated framework," Processes, vol. 9, no. 1, p. 92, 2021, doi: 10.3390/pr9010092.

[38] A. Iftekhar, X. Cui, Q. Tao, and C. Zheng, "Hyperledger Fabric access control system for Internet of Things layer in blockchain-based applications," Entropy, vol. 23, no. 8, p. 1054, 2021, doi: 10.3390/e23081054.

[39] C. Ejike, T. Mathaba, and F. Rand, "General-purpose architectural model for IoT-based in-situ monitoring systems," MATEC Web of Conferences, vol. 370, p. 05006, 2022, doi: 10.1051/matecconf/202237005006.

[40] M. Rehman, P. Jayaraman, S. Malik, A. Khan, and M. Gaber, "RedEdge: A novel architecture for big data processing in mobile edge computing environments," Journal of Sensor and Actuator Networks, vol. 6, no. 3, p. 17, 2017, doi: 10.3390/jsan6030017.

[41] E. Mishra, "Secured novel lightweight IoT end device architecture using confidentiality, integrity, authenticity, and availability-based tight security approach," Turkish Journal of Computer and Mathematics Education (TURCOMAT), vol. 12, no. 10, 2021, doi: 10.17762/turcomat.v12i10.5543.

[42] A. Ibrahim, A. Abbas, A. Hassan, W. Abdel-Rehim, A. Emam, and S. Mohsen, "Design and implementation of a pilot model for IoT smart home networks," IEEE Access, vol. 11, pp. 59701–59728, 2023, doi: 10.1109/ACCESS.2023.3282095.

[43] J. Rubio-Aparicio, F. Cerdán, J. Muro, and J. Ybarra-Moreno, "Design and implementation of a mixed IoT LPWAN network architecture," Sensors, vol. 19, no. 3, p. 675, 2019, doi: 10.3390/s19030675.

[44] S. M. Raza, J. Jeong, M. Kim, B. Kang, and H. Choo, "Empirical performance and energy consumption evaluation of container solutions on resource-constrained IoT gateways," Sensors, vol. 21, no. 4, p. 1378, 2021, doi: 10.3390/s21041378.

[45] S. Hauschild and H. Hellbrück, "Latency and energy consumption of convolutional neural network models from IoT edge perspective," in Proc. Global IoT Summit (GIoTS), Cham, Switzerland: Springer International Publishing, 2022, pp. 385–396, doi: 10.1007/978-3-031-10347-6_31.

[46] W. Wang, J. Cui, R. Ju, X. T. F. Li, B. Tu, G. Li, and L. Han, "A low-latency and high-scalability network with extreme QoS assurance," in Proc. IEEE INFOCOM Workshops (INFOCOM WKSHPS), Apr. 2018, pp. 1–2, doi: 10.1109/INFCOMW.2018.8406982.

[47] A. K. Ranjan and P. Kumar, "Advanced privacy-preserving framework for enhancing fog computing to secure IoT data stream," Journal of Electrical Systems, vol. 20, no. 2s, 2024, doi: 10.52783/jes.1150.

[48] Ulmeanu, M. E., Doicin, C. V., Dugăeșescu, I., Zaharia, C., & Pârvu, G. M. (2024, June). Functional Analysis: A Case Study of an IoT-Based Health Monitoring System. In Macromolecular Symposia (Vol. 413, No. 3, p. 2300207).

[49] Yadegari, F., & Asosheh, A. (2023). Introducing a service model in IoT-based smart hospital. Journal of Health and Biomedical Informatics, 9(4), 267-276.

[50] M. A. Rizkifar, Y. Priyadi, and M. J. Alibasa, "Validating requirement specification using text mining analysis," in Proc. 2023 3rd Int. Conf. on Electronic and Electrical Engineering and Intelligent System (ICE3IS), Aug. 2023, pp. 252–257, doi: 10.1109/ICE3IS58375.2023.10272986.

[51] B. Haq, M. Nadeem, I. Ali, K. Ali, M. Raza, and M. U. Rehmanr, "Use of expert systems in requirements engineering process: A systematic literature review," in Proc. UK/China Emerging Technologies Conf. (UCET), 2019, pp. 1–5, doi: 10.1109/UCET.2019.8881875.

[52] J. Silva and A. Araújo, "The use of OpenEHR archetypes in requirements elicitation: Best practices for engaging domain experts in healthcare software development," IEEE Access, vol. 12, 2024, doi: 10.1109/ACCESS.2024.3387652.

SUPPLEMENTARY TABLE 1

TABLE II. LIST OF INCLUDED STUDIES

Paper ID	Database	Year	References
SID001	IEEE	2016	[Canedo, J., & Skjellum, A. (2016, December). Using machine learning to secure IoT systems. In 2016 14th annual conference on privacy, security and trust (PST) (pp. 219-222). IEEE. https://doi.org/10.1109/ISMSIT50672.2020.9254304
SID002	IEEE	2017	Al-Rubaye, S., Kadhum, E., Ni, Q., & Anpalagan, A. (2017). Industrial internet of things driven by SDN platform for smart grid resiliency. IEEE Internet of Things Journal, 6(1), 267-277. https://doi.org/10.1109/JIOT.2017.2734903
SID003	IEEE	2018	Pathinarupothi, R. K., Durga, P., & Rangan, E. S. (2018). IoT-based smart edge for global health: Remote monitoring with severity detection and alerts transmission. IEEE Internet of things Journal, 6(2), 2449-2462. https://doi.org/10.1109/JIOT.2018.2870068
SID004	IEEE	2018	Banaie, F., Misic, J., Misic, V. B., Moghaddam, M. H. Y., & Seno, S. A. H. (2018). Performance analysis of multithreaded IoT gateway. IEEE Internet of Things Journal, 6(2), 3143-3155. https://doi.org/10.1109/JIOT.2018.2879467
SID005	ACM	2019	Bakshi, A., Chen, L., Srinivasan, K., Koksal, C. E., & Eryilmaz, A. (2019). EMIT: An efficient MAC paradigm for the Internet of Things. IEEE/ACM Transactions on Networking, 27(4), 1572-1583. https://doi.org/10.1109/TNET.2019.2928002
SID006	ACM	2019	Maamar, Z., Baker, T., Faci, N., Ugljanin, E., Khafajiy, M. A., & Burégio, V. (2019, April). Towards a seamless coordination of cloud and fog: illustration through the internet-of-things. In Proceedings of the 34th ACM/SIGAPP symposium on applied computing (pp. 2008-2015). https://doi.org/10.1145/3297280.3297477
SID007	IEEE	2019	Park, K., Park, Y., Das, A. K., Yu, S., Lee, J., & Park, Y. (2019). A dynamic privacy-preserving key management protocol for V2G in social Internet of Things. IEEE Access, 7, 76812–76832. https://doi.org/10.1109/ACCESS.2019.2921399
SID008	IEEE	2019	De Iasio, A., Furno, A., Goglia, L., & Zimeo, E. (2019, December). A microservices platform for monitoring and analysis of iot traffic data in smart cities. In 2019 IEEE International Conference on Big Data (Big Data) (pp. 5223-5232). IEEE. https://doi.org/10.1109/BigData47090.2019.9006025

SID009	IEEE	2019	Banerjee, S., Odelu, V., Das, A. K., Srinivas, J., Kumar, N., Chattopadhyay, S., & Choo, K. K. R. (2019). A provably secure and lightweight anonymous user authenticated session key exchange scheme for Internet of Things deployment. IEEE Internet of Things Journal, 6(5), 8739-8752. https://doi.org/10.1109/JIOT.2019.2923373
SID010	IEEE	2019	Gross, K., & Wang, G. C. (2019, December). AI decision support prognostics for IOT asset health monitoring, failure prediction, time to failure. In 2019 International Conference on Computational Science and Computational Intelligence (CSCI) (pp. 244-248). IEEE. https://doi.org/10.1109/CSCI49370.2019.00050
SID011	IEEE	2019	Fayyaz, H., Rehman, Z. U., & Abbas, S. (2019, November). An IoT enabled framework for smart buildings empowered with cloud & fog infrastructures. In 2019 International Conference on Innovative Computing (ICIC) (pp. 1-8). IEEE. https://doi.org/10.1109/ICIC48496.2019.8966715
SID012	IEEE	2019	De Paula, H. T., Gomes, J. B., Affonso, L. F., Rabelo, R. A., & Rodrigues, J. J. (2019, May). An IoT-based water monitoring system for smart buildings. In 2019 IEEE international conference on communications workshops (ICC workshops) (pp. 1-5). IEEE. https://doi.org/10.1109/ICCW.2019.8756905
SID013	IEEE	2019	Cao, H., & Wachowicz, M. (2019, October). Analytics everywhere for streaming iot data. In 2019 Sixth International Conference on Internet of Things: Systems, Management and Security (IOTSMS) (pp. 18-25). IEEE. https://doi.org/10.1109/IOTSMS48152.2019.8939171
SID014	IEEE	2019	de Puga, J. S., Salvador, C. E. P., & Pellicer, A. B. (2019, July). Architecture and use case for an iot deployment with sdn at the edge and dual physical and virtual gateway. In 2019 28th International Conference on Computer Communication and Networks (ICCCN) (pp. 1-6). IEEE. https://doi.org/10.1109/ICCCN.2019.8847095
SID015	IEEE	2019	Júnior, M. J., Maia, O. B., Oliveira, H., Souto, E., & Barreto, R. (2019, September). Assistive technology through internet of things and edge computing. In 2019 IEEE 9th International Conference on Consumer Electronics (ICCE-Berlin) (pp. 330-332). IEEE. https://doi.org/10.1109/ICCE-Berlin47944.2019.8966148
SID016	IEEE	2019	Latif, S., Rehman, A., & Zafar, N. A. (2019, December). Blockchain and IoT based formal model of smart waste management system using TLA+. In 2019 International conference on frontiers of information technology (FIT) (pp. 304-3045). IEEE. https://doi.org/10.1109/FIT47737.2019.00064
SID017	ACM	2019	Sigwart, M., Borkowski, M., Peise, M., Schulte, S., & Tai, S. (2019, October). Blockchain-based data provenance for the internet of things. In Proceedings of the 9th International Conference on the Internet of Things (pp. 1-8). https://doi.org/10.1145/3365871.3365886
SID018	IEEE	2019	Danilchenko, V., Theobald, M., & Cohen, D. (2019, December). Bootstrapping security configuration for IoT devices on networks with TLS inspection. In 2019 IEEE Globecom Workshops (GC Wkshps) (pp. 1-7). IEEE. https://doi.org/10.1109/GCWkshps45667.2019.9024325
SID019	IEEE	2019	Bonafini, F., Rinaldi, S., Depari, A., Flammini, A., Ferrari, P., & Sisinni, E. (2019, March). Cluster of iot sensors for sma rt cities: impact of the communication infrastructure over computational performance. In 2019 IEEE sensors applications symposium (SAS) (pp. 1-6). IEEE. https://doi.org/10.1109/SAS.2019.8706079
SID020	IEEE	2019	Spanos, G., Giannoutakis, K. M., Votis, K., & Tzovaras, D. (2019, September). Combining statistical and machine learning techniques in IoT anomaly detection for smart homes. In 2019 IEEE 24th International Workshop on Computer Aided Modeling and Design of Communication Links and Networks (CAMAD) (pp. 1-6). IEEE. https://doi.org/10.1109/CAMAD.2019.8858490
SID021	IEEE	2019	Kölsch, J., Ratzke, A., & Grimm, C. (2019, April). Co-Simulating the Internet of Things in a Smart Grid use case scenario. In 2019 7th Workshop on Modeling and Simulation of Cyber-Physical Energy Systems (MSCPES) (pp. 1-6). IEEE. https://doi.org/10.1109/MSCPES.2019.8738795
SID022	IEEE	2019	Aklamanu, F., Randriamasy, S., & Renault, E. (2019, October). Intent-based 5G IoT application network slice deployment. In 2019 10th International Conference on Networks of the Future (NoF) (pp. 141-143). IEEE. 10.1109/NoF47743.2019.9015048
SID023	IEEE	2019	Mekruksavanich, S. (2019, October). Design and implementation of the smart shopping basket based on IoT technology. In 2019 14th International Joint Symposium on Artificial Intelligence and Natural Language Processing (iSAI-NLP) (pp. 1-6). IEEE. https://doi.org/10.1109/iSAI-NLP48611.2019.9045336
SID024	IEEE / ACM	2019	Verghelet, P., & Mocskos, E. (2019, December). First Steps in creating a Methodology to develop and test Scheduling Policies for Internet of Things. In 2019 Winter Simulation Conference (WSC) (pp. 2629-2640). IEEE. https://doi.org/10.1109/WSC40007.2019.9004950
SID025	IEEE	2019	Rescati, M., Scapini, E., DeMatteis, M., Schettini, R., Pau, D., Paganoni, M., & Baschirotto, A. (2019, September). HAEMS: implementation of an intelligent event-driven edge mesh IoT architecture. In 2019 IEEE 5th International forum on Research and Technology for Society and Industry (RTSI) (pp. 39-44). IEEE. https://doi.org/10.1109/RTSI.2019.8895581
SID026	IEEE	2019	Kamiyama, M., Madokoro, H., Nakasho, K., Shimoi, N., Woo, H., & Sato, K. (2019, October). Invisible and Cost-Effective Sensors with a Network Robot for an IoT House for Tourists. In 2019 19th International Conference on Control, Automation and Systems (ICCAS) (pp. 460-465). IEEE. https://doi.org/10.23919/ICCAS47443.2019.8971768
SID027	IEEE	2019	Day, R. J., Salehi, H., & Javadi, M. (2019, December). Iot environmental analyzer using sensors and machine learning for migraine occurrence prevention. In 2019 18th IEEE International Conference On Machine Learning And Applications (ICMLA) (pp. 1460-1465). IEEE. https://doi.org/10.1109/ICMLA.2019.00239
SID028	IEEE	2019	Pereira, R. I., Jucá, S. C., Carvalho, P. C., & Souza, C. P. (2019). Iot network and sensor signal conditioning for meteorological data and photovoltaic module temperature monitoring. IEEE Latin America Transactions, 17(06), 937-944. https://doi.org/10.1109/TLA.2019.8896816
SID029	IEEE	2019	Hamdan, O., Shanableh, H., Zaki, I., Al-Ali, A. R., & Shanableh, T. (2019, January). IoT-based interactive dual mode smart home automation. In 2019 IEEE international conference on consumer electronics (ICCE) (pp. 1-2). IEEE. https://doi.org/10.1109/ICCE.2019.8661935
SID030	IEEE	2019	Zitouni, R., Petit, J., Djoudi, A., & George, L. (2019, July). IoT-based urban traffic-light control: modelling, prototyping and evaluation of MQTT protocol. In 2019 International Conference on Internet of Things (iThings) and IEEE Green Computing and Communications (GreenCom) and IEEE Cyber, Physical and Social Computing (CPSCom) and IEEE Smart Data (SmartData) (pp. 182-189). IEEE. https://doi.org/10.1109/iThings/GreenCom/CPSCom/SmartData.2019.00051
SID031	IEEE	2019	Sanchez-Iborra, R., Covaci, S., Santa, J., Sanchez-Gomez, J., Gallego-Madrid, J., & Skarmeta, A. F. (2019, December). MEC-assisted end-to-end 5G-slicing for IoT. In 2019 IEEE Global Communications Conference (GLOBECOM) (pp. 1-6).

			IEEE. https://doi.org/10.1109/GLOBECOM38437.2019.9013623
SID032	IEEE	2019	Sundharam, S. M. (2019, March). Modeling of high level system requirements-An IoT case-study. In 2019 International Conference on Vision Towards Emerging Trends in Communication and Networking (ViTECoN) (pp. 1-7). IEEE. https://doi.org/10.1109/ViTECoN.2019.8899419
SID033	IEEE	2019	Ajchariyavanich, C., Limpisthira, T., Chanjarasvichai, N., Jareonwatanan, T., Phongphanpanya, W., Wareechuensuk, S., ... & Pipattanasomporn, M. (2019, October). Park king: an IoT-based smart parking system. In 2019 IEEE International Smart Cities Conference (ISC2) (pp. 729-734). IEEE. https://doi.org/10.1109/ISC246665.2019.9071721
SID034	IEEE	2019	Taylor, G. A., Torres, H. B., Ruiz, F., Marin, M. N., Chaves, D. M., Arboleda, L. T., ... & Mouazen, A. M. (2019). pH measurement IoT system for precision agriculture applications. IEEE Latin America Transactions, 17(05), 823-832. https://doi.org/10.1109/TLA.2019.8891951
SID035	IEEE	2019	Mubarakali, A., Jaganathan, S. C. B., Marina, N., & Kumar, A. D. (2019, February). Programmed water management system for irrigation using internet of things. In 2019 International Conference on Intelligent Sustainable Systems (ICISS) (pp. 203-207). IEEE. https://doi.org/10.1109/ISS1.2019.8908110
SID036	IEEE	2019	Abraham, E., Nameer, C. K., Tom, R., Ganesh, Y., & Vidhya, S. S. (2019, July). Pro-Safe: An IoT based Smart Application for Emergency Help. In 2019 2nd International Conference on Intelligent Computing, Instrumentation and Control Technologies (ICICICT) (Vol. 1, pp. 593-597). IEEE. https://doi.org/10.1109/ICICICT46008.2019.8993220
SID037	IEEE	2019	Das, A. K., Wazid, M., Yannam, A. R., Rodrigues, J. J., & Park, Y. (2019). Provably secure ECC-based device access control and key agreement protocol for IoT environment. IEEE Access, 7, 55382-55397. https://doi.org/10.1109/ACCESS.2019.2912998
SID038	IEEE	2019	Alduais, N. A. M., Abdullah, J., & Jamil, A. (2019). RDCM: An efficient real-time data collection model for IoT/WSN edge with multivariate sensors. IEEE Access, 7, 89063-89082. https://doi.org/10.1109/ACCESS.2019.2926209
SID039	IEEE	2019	Khan, S., Alzahrani, A. I., Alfarraj, O., Alalwan, N., & Al-Bayatti, A. H. (2019). Resource efficient authentication and session key establishment procedure for low-resource IoT devices. IEEE Access, 7, 170615-170628. https://doi.org/10.1109/ACCESS.2019.2955604
SID040	ACM	2019	Anantharaman, P., Palani, K., & Smith, S. (2019, October). Scalable identity and key management for publish-subscribe protocols in the Internet-of-Things. In Proceedings of the 9th International Conference on the Internet of Things (pp. 1-7). https://doi.org/10.1145/3365871.3365883
SID041	IEEE	2019	Georgiev, I., & Georgiev, I. (2019, September). Simulation-based self-testing in IoT-enabled manufacturing. In 2019 International Conference on Information Technologies (InfoTech) (pp. 1-4). IEEE. https://doi.org/10.1109/InfoTech.2019.8860882
SID042	IEEE	2019	Patel, N. D., Mehtre, B. M., & Wankar, R. (2019, December). Simulators, emulators, and test-beds for internet of things: A comparison. In 2019 Third International conference on I-SMAC (IoT in Social, Mobile, Analytics and Cloud)(I-SMAC) (pp. 139-145). IEEE. https://doi.org/10.1109/I-SMAC47947.2019.9032519
SID043	IEEE	2019	Tang, S., Gu, Z., Yang, Q., & Fu, S. (2019, December). Smart home iot anomaly detection based on ensemble model learning from heterogeneous data. In 2019 IEEE international conference on big data (Big Data) (pp. 4185-4190). IEEE. https://doi.org/10.1109/BigData47090.2019.9006249
SID044	IEEE	2019	Alghanmi, N., Alotaibi, R., & Buhari, S. M. (2019, June). TCMD: A two-tier classification model for anomaly-based detection in IoT. In 2019 6th Swiss Conference on Data Science (SDS) (pp. 130-135). IEEE. https://doi.org/10.1109/SDS.2019.00013
SID045	IEEE	2019	Hovhannisyan, D., Eltawil, A., & Kurdahi, F. (2019, May). Testing topology adaptive irrigation iot with circuits. In 2019 IEEE International Symposium on Circuits and Systems (ISCAS) (pp. 1-5). IEEE. https://doi.org/10.1109/ISCAS.2019.8702559
SID046	IEEE	2019	Zeeshan, N., Reed, M., & Siddiqui, Z. (2019, August). Three-way security framework for cloud based IoT network. In 2019 International Conference on Computing, Electronics & Communications Engineering (iCCECE) (pp. 183-186). IEEE. https://doi.org/10.1109/iCCECE46942.2019.8941877
SID047	IEEE	2019	Garg, S., Kaur, K., Kaddoum, G., & Choo, K. K. R. (2019). Toward secure and provable authentication for Internet of Things: Realizing industry 4.0. IEEE Internet of Things Journal, 7(5), 4598-4606. https://doi.org/10.1109/JIOT.2019.2942271
SID048	IEEE	2019	Russell, L., Kwamena, F., & Goubran, R. (2019, August). Towards reliable IoT: Fog-based AI sensor validation. In 2019 IEEE Cloud Summit (pp. 37-44). IEEE. https://doi.org/10.1109/CloudSummit47114.2019.00013
SID049	IEEE	2019	Gore, R. N., Elizabeth, N., Dzung, D., & Ashok, S. (2019, January). Towards robust synchronization in IoT networks. In 2019 11th International Conference on Communication Systems & Networks (COMSNETS) (pp. 678-683). IEEE. https://doi.org/10.1109/COMSNETS.2019.8711343
SID050	IEEE	2019	Peniak, P., & Bubeníková, E. (2019, September). Validation of IoT secure communication gateway for constrained devices. In 2019 International Conference on Applied Electronics (AE) (pp. 1-5). IEEE. https://doi.org/10.23919/AE.2019.8866990
SID051	IEEE	2019	Kumar, R., Venkanna, U., & Tiwari, V. (2020). A binary classification approach for time granular traffic in SDWMN based IoT networks. In 2020 12th International Conference on COMmunication Systems & NETworks (COMSNETS) (pp. 531–534). IEEE. https://doi.org/10.1109/COMSNETS48256.2020.9027336
SID052	Springer	2020	Lee, Y., Rathore, S., Park, J. H., & Park, J. H. (2020). A blockchain-based smart home gateway architecture for preventing data forgery. Human-centric Computing and Information Sciences, 10, 9. https://doi.org/10.1186/s13673-020-0214-5
SID053	Springer	2020	Zhang, Z., Jing, J., Wang, X., Choo, K.-K. R., & Gupta, B. B. (2020). A crowdsourcing method for online social networks security assessment based on human-centric computing. Human-centric Computing and Information Sciences, 10, 23. https://doi.org/10.1186/s13673-020-00230-0
SID054	ACM	2020	Etiabi, Y., Amhoud, E. M., & Sabir, E. (2020). A distributed and collaborative localization algorithm for Internet of Things environments. In Proceedings of the 18th International Conference on Advances in Mobile Computing & Multimedia (MoMM '20) (pp. 114–118). Association for Computing Machinery. https://doi.org/10.1145/3428690.3429161
SID055	Scopus	2020	Shapsough, S. Y., & Zualkernan, I. A. (2020). A generic IoT architecture for ubiquitous context-aware learning. IEEE Transactions on Learning Technologies, 13(3), 449–464. https://doi.org/10.1109/TLT.2020.3007708
SID056	IEEE	2020	Olatinwo, D. D., Abu-Mahfouz, A. M., & Hancke, G. P. (2021). A hybrid multi-class MAC protocol for IoT-enabled WBAN systems. IEEE Sensors Journal, 21(5), 6761–6774. https://doi.org/10.1109/JSEN.2020.3037788

SID057	Springer	2020	Bureš, T., Gerostathopoulos, I., Hnětynka, P., Plášil, F., Krijt, F., Vinárek, J., & Kofroň, J. (2020). A language and framework for dynamic component ensembles in smart systems. International Journal on Software Tools for Technology Transfer, 22, 497–509. https://doi.org/10.1007/s10009-020-00558-z
SID058	IEEE / Scopus	2020	Aman, M. N., Basheer, M. H., & Sikdar, B. (2020). A lightweight protocol for secure data provenance in the Internet of Things using wireless fingerprints. IEEE Systems Journal, 15(2), 2948-2958. https://doi.org/10.1109/JSYST.2020.3000269
SID059	Scopus	2020	Hagos, D. H., Yazidi, A., Kure, Ø., & Engelstad, P. E. (2020). A machine-learning-based tool for passive os fingerprinting with tcp variant as a novel feature. IEEE Internet of Things Journal, 8(5), 3534-3553. https://doi.org/10.1109/JIOT.2020.3024293
SID060	IEEE / Scopus	2020	Ciliberti, F., Giusto, F., Accetta, L., Vergari, G., Sergi, I., & Patrono, L. (2020, September). A New Approach to Monitor Sarcopenic Patients based on IoT Technologies. In 2020 5th International Conference on Smart and Sustainable Technologies (SpliTech) (pp. 1-5). IEEE. https://doi.org/10.23919/SpliTech49282.2020.9243692
SID061	Scopus	2020	Keerthi, A. M., Raksha, R., & Rakesh, N. (2020, November). A novel remote monitoring smart system for the elderly using internet of things. In 2020 4th International Conference on Electronics, Communication and Aerospace Technology (ICECA) (pp. 596-602). IEEE. https://doi.org/10.1109/ICECA49313.2020.9297403
SID062	IEEE	2020	Roy, S. K., Misra, S., Raghuwanshi, N. S., & Das, S. K. (2020). AgriSens: IoT-based dynamic irrigation scheduling system for water management of irrigated crops. IEEE Internet of Things Journal, 8(6), 5023-5030. https://doi.org/10.1109/JIOT.2020.3036126
SID063	IEEE/ Scopus	2020	Jacob, S., Alagirisamy, M., Menon, V. G., Kumar, B. M., Jhanjhi, N. Z., Ponnusamy, V., ... & Balasubramanian, V. (2020). An adaptive and flexible brain energized full body exoskeleton with IoT edge for assisting the paralyzed patients. IEEE Access, 8, 100721-100731. https://doi.org/10.1109/ACCESS.2020.2997727
SID064	ACM	2020	Santos, L., Silva, E., Batista, T., Cavalcante, E., Leite, J., & Oquendo, F. (2020, March). An architectural style for internet of things systems. In Proceedings of the 35th Annual ACM Symposium on applied computing (pp. 1488-1497). https://doi.org/10.1145/3341105.3374030
SID065	Scopus	2020	Otoom, M., Otoum, N., Alzubaidi, M. A., Etoom, Y., & Banihani, R. (2020). An IoT-based framework for early identification and monitoring of COVID-19 cases. Biomedical signal processing and control, 62, 102149. https://doi.org/10.1016/j.bspc.2020.102149
SID066	IEEE	2020	Li, J. Y., Qi, S., Ji, K. Q., Zhang, Y., Liang, S. T., & Lu, J. T. (2020, October). Application Research on Internet-of-Things in Park-Level Intelligent Energy Protection and Control. In 2020 IEEE 20th International Conference on Communication Technology (ICCT) (pp. 813-817). IEEE. https://doi.org/10.1109/ICCT50939.2020.9295679
SID067	IEEE	2020	Fiorentino, G., Occhipinti, C., Corsi, A., Moro, E., Davies, J., & Duke, A. (2020). Blockchain: Enabling trust on the internet of things. The Internet of Things: From Data to Insight, 141-157. https://doi.org/10.1002/9781119545293.ch11
SID068	IEEE	2020	Goyat, R., Kumar, G., Alazab, M., Conti, M., Rai, M. K., Thomas, R., ... & Kim, T. H. (2020). Blockchain-based data storage with privacy and authentication in internet of things. IEEE Internet of Things Journal, 9(16), 14203-14215. https://doi.org/10.1109/JIOT.2020.3019074
SID069	IEEE / Scopus	2020	Hosen, A. S., Singh, S., Sharma, P. K., Ghosh, U., Wang, J., Ra, I. H., & Cho, G. H. (2020). Blockchain-based transaction validation protocol for a secure distributed IoT network. IEEE Access, 8, 117266-117277. https://doi.org/10.1109/ACCESS.2020.3004486
SID070	Scopus	2020	Mongelli, M., Orani, V., Cambiaso, E., Vaccari, I., Paglialonga, A., Braido, F., & Catalano, C. E. (2020, August). Challenges and Opportunities of IoT and AI in Pneumology. In 2020 23rd Euromicro Conference on Digital System Design (DSD) (pp. 285-292). IEEE. https://doi.org/10.1109/DSD51259.2020.00054
SID071	Scopus	2020	Rojas, E., Bastidas, V., & Cabrera, C. (2020). Cities-board: a framework to automate the development of smart cities dashboards. IEEE Internet of Things Journal, 7(10), 10128-10136. https://doi.org/10.1109/JIOT.2020.3002581
SID072	IEEE / Scopus / WoS	2020	Wang, M., Qian, C., Li, X., Shi, S., & Chen, S. (2020). Collaborative validation of public-key certificates for IoT by distributed caching. IEEE/ACM Transactions on Networking, 29(1), 92-105. https://doi.org/10.1109/INFOCOM.2019.8737423
SID073	IEEE / Scopus	2020	Ayeb, N., Rutten, E., Bolle, S., Coupaye, T., & Douet, M. (2020, September). Coordinated autonomic loops for target identification, load and error-aware Device Management for the IoT. In 2020 15th Conference on Computer Science and Information Systems (FedCSIS) (pp. 491-500). IEEE. https://doi.org/10.15439/2020F154
SID074	Scopus	2020	Kumar, A., & Hariharan, N. (2020). DCRL-RPL: Dual context-based routing and load balancing in RPL for IoT networks. IET Communications, 14(12), 1869-1882. https://doi.org/10.1049/iet-com.2020.0091
SID075	Scopus	2020	Baena-Navarro, R., Torres-Hoyos, F., Uc–Rios, C., & Colmenares-Quintero, R. F. (2020). Design and assembly of an IoT-based device to determine the absorbed dose of gamma and UV radiation. Applied Radiation and Isotopes, 166, 109359. https://doi.org/10.1016/j.apradiso.2020.109359
SID076	Scopus	2020	Sha, P., Chen, S., Zheng, L., Liu, X., Tang, H., & Li, Y. (2020). Design and implement of microservice system for edge computing. IFAC-PapersOnLine, 53(5), 507-511. https://doi.org/10.1016/j.ifacol.2021.04.137
SID077	Scopus	2020	Chen, G., Jiang, T., Wang, M., Tang, X., & Ji, W. (2020). Design and model checking of timed automata oriented architecture for Internet of thing. International Journal of Distributed Sensor Networks, 16(5), 1550147720911008. https://doi.org/10.1177/1550147720911008
SID078	Scopus / WoS	2020	Amitrano, F., Coccia, A., Ricciardi, C., Donisi, L., Cesarelli, G., Capodaglio, E. M., & D'Addio, G. (2020). Design and validation of an e-textile-based wearable sock for remote gait and postural assessment. Sensors, 20(22), 6691. https://doi.org/10.3390/s20226691
SID079	IEEE / Scopus	2020	Shorfuzzaman, M. (2020, October). Detection of cyber attacks in IoT using tree-based ensemble and feedforward neural network. In 2020 IEEE International Conference on Systems, Man, and Cybernetics (SMC) (pp. 2601-2606). IEEE. https://doi.org/10.1109/SMC42975.2020.9283443
SID080	Scopus	2020	Mialdea-Flor, I., López-Ballester, J., Garcia-Pineda, M., Navarro-Camba, E., Soriano-Asensi, A., Fayos-Jordán, R., ... & Alcaraz-Calero, J. M. (2020, November). Development of a low-cost IoT system to detect and locate lightning strikes. In Proceedings of the 10th Euro-American Conference on Telematics and Information Systems (pp. 1-8). https://doi.org/10.1145/3401895.3401916
SID081	Scopus	2020	Sahlab, N., Jazdi, N., Weyrich, M., Schmid, P., Reichelt, F., Maier, T., ... & Kalka, G. (2020). Development of an intelligent pill dispenser based on an IoT-approach. In Human Systems Engineering and Design II: Proceedings of the 2nd International Conference on Human Systems Engineering and Design (IHSED2019): Future Trends and Applications,

			September 16-18, 2019, Universität der Bundeswehr München, Munich, Germany (pp. 33-39). Springer International Publishing. https://doi.org/10.1007/978-3-030-27928-8_6
SID082	Scopus	2020	Kamel, M. B., Wallis, K., Ligeti, P., & Reich, C. (2020, October). Distributed data validation network in IoT: a decentralized validator selection model. In Proceedings of the 10th International Conference on the Internet of Things (pp. 1-8). https://doi.org/10.1145/3410992.3411027
SID083	IEEE	2020	Niya, S. R., Beckmann, R., & Stiller, B. (2020, November). DLIT: a scalable distributed ledger for iot data. In 2020 Second International Conference on Blockchain Computing and Applications (BCCA) (pp. 100-107). IEEE. https://doi.org/10.1109/BCCA50787.2020.9274456
SID084	IEEE / Scopus	2020	Hamdani, S. W. A., Khan, A. W., Iltaf, N., & Iqbal, W. (2020, August). DTMSim-IoT: A distributed trust management simulator for IoT networks. In 2020 IEEE Intl Conf on Dependable, Autonomic and Secure Computing, Intl Conf on Pervasive Intelligence and Computing, Intl Conf on Cloud and Big Data Computing, Intl Conf on Cyber Science and Technology Congress (DASC/PiCom/CBDCom/CyberSciTech) (pp. 491-498). IEEE. https://doi.org/10.1109/DASC-PICom-CBDCom-CyberSciTech49142.2020.00091
SID085	Scopus	2020	Xin, X., Keoh, S. L., Sevegnani, M., & Saerbeck, M. (2020, August). Dynamic probabilistic model checking for sensor validation in Industry 4.0 applications. In 2020 IEEE International Conference on Smart Internet of Things (SmartIoT) (pp. 43-50). IEEE. https://doi.org/10.1109/SmartIoT49966.2020.00016
SID086	Scopus	2020	Debauche, O., Mahmoudi, S., Mahmoudi, S. A., Manneback, P., & Lebeau, F. (2020). Edge computing and artificial intelligence semantically driven. application to a climatic enclosure. Procedia Computer Science, 175, 542-547. https://doi.org/10.1016/j.procs.2020.07.077
SID087	IEEE	2020	Seng, L. G., Wei, K. L. K., & Narciso, S. J. (2020, April). Effective industry ready iot applied courseware-teaching iot design and validation. In 2020 IEEE Global Engineering Education Conference (EDUCON) (pp. 1579-1583). IEEE. https://doi.org/10.1109/EDUCON45650.2020.9125366
SID088	Scopus	2020	Ballesteros, J., Ayala, I., Caro-Romero, J. R., Amor, M., & Fuentes, L. (2020). Evolving dynamic self-adaptation policies of mhealth systems for long-term monitoring. Journal of Biomedical Informatics, 108, 103494. https://doi.org/10.1016/j.jbi.2020.103494
SID089	ACM	2020	Guedey, M., & Uckelmann, D. (2020, October). Exploring smart home and internet of things technologies for smart public buildings. In Proceedings of the 10th International Conference on the Internet of Things (pp. 1-8). https://doi.org/10.1145/3410992.3411009
SID090	Springer	2020	Yang, X., Liu, Y., Wang, J., Yao, Z., Zhou, Y., & Fu, S. (2020). Flexible automatic detection for security management of dispatching data network. Journal of Cloud Computing, 9(1), 20. https://doi.org/10.1186/s13677-020-00163-0
SID091	Scopus	2020	Olmsted, J., & Al-Masri, E. (2020, August). FogWeaver: Task allocation optimization strategy across hybrid fog environments. In 2020 3rd IEEE International Conference on Knowledge Innovation and Invention (ICKII) (pp. 156-159). IEEE. https://doi.org/10.1109/ICKII50300.2020.9318846
SID092	IEEE	2020	Becerril, J. A., Ramírez-delReal, T. A., Villanueva, D., & Arellano-Vázquez, M. (2020, November). Gateway design based on IoT Methodology using a Beaglebone Black Wireless. In 2020 IEEE International Autumn Meeting on Power, Electronics and Computing (ROPEC) (Vol. 4, pp. 1-6). IEEE. https://doi.org/10.1109/ROPEC50909.2020.9258764
SID093	Scopus	2020	Cai, W. Y., Guo, J. H., Zhang, M. Y., Ruan, Z. X., Zheng, X. C., & Lv, S. S. (2020). GBDT-Based Fall Detection with Comprehensive Data from Posture Sensor and Human Skeleton Extraction. Journal of healthcare engineering, 2020(1), 8887340. https://doi.org/10.1155/2020/8887340
SID094	IEEE / Scopus	2020	Nurminen, A., & Malhi, A. (2020, December). Green Thumb Engineering: Artificial intelligence for managing IoT enabled houseplants. In 2020 IEEE Global Conference on Artificial Intelligence and Internet of Things (GCAIoT) (pp. 01-07). IEEE. https://doi.org/10.1109/GCAIoT51063.2020.9345850
SID095	IEEE	2020	Fama, F., Santos, D. F., & Perkusich, A. (2020, September). Integrating an iot application middleware with a fog and edge computing simulator. In 2020 International Conference on Software, Telecommunications and Computer Networks (SoftCOM) (pp. 1-6). IEEE. https://doi.org/10.23919/SoftCOM50211.2020.9238245
SID096	IEEE / Scopus	2020	Sergi, I., Malagnino, A., Rosito, R. C., Lacasa, V., Corallo, A., & Patrono, L. (2020, September). Integrating BIM and IoT technologies in innovative fire management systems. In 2020 5th International Conference on Smart and Sustainable Technologies (SpliTech) (pp. 1-5). IEEE. https://doi.org/10.23919/SpliTech49282.2020.9243838
SID097	Scopus	2020	Sarmiento, A., & Diakité, A. A. (2020). Integration of IoT sensors to 3D indoor models with IndoorGML. The International Archives of the Photogrammetry, Remote Sensing and Spatial Information Sciences, 44, 135-142. https://doi.org/10.5194/isprs-archives-XLIV-4-W1-2020-135-2020
SID098	IEEE	2020	Ranjan, R., Sinha, R., Khot, L. R., Peters, R. T., & Salazar-Gutierrez, M. R. (2020, November). Internet of Things enabled crop physiology sensing system for abiotic crop stress management in apple and sweet cherry. In 2020 IEEE International Workshop on Metrology for Agriculture and Forestry (MetroAgriFor) (pp. 273-277). IEEE. https://doi.org/10.1109/MetroAgriFor50201.2020.9277581
SID099	Scopus	2020	Alqahtani, M., Mathkour, H., & Ben Ismail, M. M. (2020). IoT botnet attack detection based on optimized extreme gradient boosting and feature selection. Sensors, 20(21), 6336. https://doi.org/10.3390/s20216336
SID100	IEEE / Scopus	2020	Tham, O. Y., Markom, M. A., Bakar, A. A., Tan, E. M. M., & Markom, A. M. (2020, October). IoT health monitoring device of oxygen saturation (SpO2) and heart rate level. In 2020 1st International conference on information technology, advanced mechanical and electrical engineering (ICITAMEE) (pp. 128-133). IEEE. https://doi.org/10.1109/ICITAMEE50454.2020.9398455
SID101	IEEE / Scopus	2020	Doss, J. K. S., & Kamalakkannan, S. (2020, October). IoT system accomplishment using blockchain in validating and data security with cloud. In 2020 Fourth International Conference on I-SMAC (IoT in Social, Mobile, Analytics and Cloud)(I-SMAC) (pp. 60-64). IEEE. https://doi.org/10.1109/I-SMAC49090.2020.9243412
SID102	Scopus	2020	Vieira, E., Bartolomeu, P. C., Hosseini, S. M., & Ferreira, J. (2020, June). IOTApass: Enabling public transport payments with IOTA. In 2020 IEEE 6th World Forum on Internet of Things (WF-IoT) (pp. 1-6). IEEE. https://doi.org/10.1109/WF-IoT48130.2020.9221224
SID103	IEEE / Scopus	2020	Catarinucci, L., Colella, R., Consalvo, S. I., Patrono, L., Rollo, C., & Sergi, I. (2020). IoT-aware waste management system based on cloud services and ultra-low-power RFID sensor-tags. IEEE Sensors Journal, 20(24), 14873-14881. https://doi.org/10.1109/JSEN.2020.3010675

SID104	IEEE	2020	Bhatia, M. (2020). Iot-inspired framework for athlete performance assessment in smart sport industry. IEEE Internet of Things Journal, 8(12), 9523-9530. https://doi.org/10.1109/JIOT.2020.3012440
SID105	IEEE	2020	Park, K., Noh, S., Lee, H., Das, A. K., Kim, M., Park, Y., & Wazid, M. (2020). LAKS-NVT: Provably secure and lightweight authentication and key agreement scheme without verification table in medical internet of things. IEEe Access, 8, 119387-119404. https://doi.org/10.1109/ACCESS.2020.3005592
SID106	IEEE	2020	Dasiga, S., Bhatia, A. A. R., Bhirangi, A., & Siddiqua, A. (2020, December). LoRa for the last mile connectivity in IoT. In 2020 9th International Conference System Modeling and Advancement in Research Trends (SMART) (pp. 195-200). IEEE. https://doi.org/10.1109/SMART50582.2020.9337114
SID107	IEEE / Scopus	2020	Ali, S., Glass, T., Parr, B., Potgieter, J., & Alam, F. (2020). Low cost sensor with IoT LoRaWAN connectivity and machine learning-based calibration for air pollution monitoring. IEEE Transactions on Instrumentation and Measurement, 70, 1-11. https://doi.org/10.1109/TIM.2020.3034109
SID108	Scopus	2020	Han, H. J., Labbaf, S., Borelli, J. L., Dutt, N., & Rahmani, A. M. (2020). Objective stress monitoring based on wearable sensors in everyday settings. Journal of Medical Engineering & Technology, 44(4), 177-189. https://doi.org/10.1080/03091902.2020.1759707
SID109	IEEE / Scopus / WoS	2020	Makhdoom, I., Tofigh, F., Zhou, I., Abolhasan, M., & Lipman, J. (2020, November). PLEDGE: An IoT-oriented proof-of-honesty based blockchain consensus protocol. In 2020 IEEE 45th Conference on Local Computer Networks (LCN) (pp. 54-64). IEEE. https://doi.org/10.1109/LCN48667.2020.9314794
SID110	IEEE	2020	Christou, I. T., Kefalakis, N., Zalonis, A., & Soldatos, J. (2020, May). Predictive and explainable machine learning for industrial internet of things applications. In 2020 16th international conference on distributed computing in sensor systems (DCOSS) (pp. 213-218). IEEE. https://doi.org/10.1109/DCOSS49796.2020.00043
SID111	IEEE	2020	Maitra, S., Yanambaka, V. P., Abdelgawad, A., Puthal, D., & Yelamarthi, K. (2020, June). Proof-of-authentication consensus algorithm: Blockchain-based IoT implementation. In 2020 IEEE 6th World Forum on Internet of Things (WF-IoT) (pp. 1-2). IEEE. https://doi.org/10.1109/WF-IoT48130.2020.9221187
SID112	IEEE / Scopus	2020	Postolache, O., Hemanth, D. J., Alexandre, R., Gupta, D., Geman, O., & Khanna, A. (2020). Remote monitoring of physical rehabilitation of stroke patients using IoT and virtual reality. IEEE Journal on Selected Areas in Communications, 39(2), 562-573. https://doi.org/10.1109/JSAC.2020.3020600
SID113	Scopus	2020	Al-Ali, M. S., Al-Mohammed, H. A., & Alkaeed, M. (2020, February). Reputation based traffic event validation and vehicle authentication using blockchain technology. In 2020 IEEE International Conference on Informatics, IoT, and Enabling Technologies (ICIoT) (pp. 451-456). IEEE. https://doi.org/10.1109/ICIoT48696.2020.9089639
SID114	Scopus	2020	Zhiyong, S., Weiping, L., Yanghua, Z., & Yanshan, H. (2020). Research on intelligent power automation technology based on edge computing of power Internet of things. In E3S Web of Conferences (Vol. 204, p. 02006). EDP Sciences. https://doi.org/10.1051/e3sconf/202020402006
SID115	Scopus	2020	Feng, X., & Hu, J. (2020). Research on the identification and management of vehicle behaviour based on Internet of things technology. Computer Communications, 156, 68-76. https://doi.org/10.1016/j.comcom.2020.03.035
SID116	IEEE	2020	Abbas, A. W., & Marwat, S. N. K. (2020). Scalable emulated framework for IoT devices in smart logistics based cyber-physical systems: bonded coverage and connectivity analysis. IEEE Access, 8, 138350-138372. https://doi.org/10.1109/ACCESS.2020.3012458
SID117	ACM	2020	Sagar, S., Mahmood, A., Sheng, Q. Z., & Siddiqui, S. A. (2020, November). SCaRT-SIoT: towards a scalable and robust trust platform for social internet of things: demo abstract. In Proceedings of the 18th Conference on Embedded Networked Sensor Systems (pp. 635-636). https://doi.org/10.1145/3384419.3430434
SID118	Scopus	2020	Liaqat, S., Akhunzada, A., Shaikh, F. S., Giannetsos, A., & Jan, M. A. (2020). SDN orchestration to combat evolving cyber threats in Internet of Medical Things (IoMT). Computer Communications, 160, 697-705. https://doi.org/10.1016/j.comcom.2020.07.006
SID119	Scopus / WoS	2020	Hu, J., Reed, M., Thomos, N., AI-Naday, M. F., & Yang, K. (2020). Securing SDN-controlled IoT networks through edge blockchain. IEEE Internet of Things Journal, 8(4), 2102-2115. https://doi.org/10.1109/JIOT.2020.3017354
SID120	IEEE	2020	Kavitha, A., Reddy, V. B., Singh, N., Gunjan, V. K., Lakshmanna, K., Khan, A. A., & Wechtaisong, C. (2022). Security in IoT mesh networks based on trust similarity. IEEE Access, 10, 121712-121724. https://doi.org/10.1109/ACCESS.2022.3220678
SID121	Scopus	2020	Liu, Z., Qiu, X., Zhang, S., Deng, S., & Liu, G. (2020). Service Scheduling Based on Edge Computing for Power Distribution IoT. Computers, materials & continua, 62(3). https://doi.org/10.32604/cmc.2020.07334
SID122	IEEE / Scopus	2020	Sharma, S., Sharma, A., Goel, T., Deoli, R., & Mohan, S. (2020, July). Smart home gardening management system: A cloud-based internet-of-things (iot) application in vanet. In 2020 11th International Conference on Computing, Communication and Networking Technologies (ICCCNT) (pp. 1-5). IEEE. https://doi.org/10.1109/ICCCNT49239.2020.9225573
SID123	Springer	2020	Xiao-wei, X. (2020). Study on the intelligent system of sports culture centers by combining machine learning with big data. Personal and Ubiquitous Computing, 24(1), 151-163. https://doi.org/10.1007/s00779-019-01307-z
SID124	IEEE	2020	Mahlous, A. R., & Ara, A. (2020, March). The adoption of blockchain technology in iot: An insight view. In 2020 6th Conference on Data Science and Machine Learning Applications (CDMA) (pp. 100-105). IEEE. https://doi.org/10.1109/CDMA47397.2020.00023
SID125	Springer	2020	Bibri, S. E. (2020). The eco-city and its core environmental dimension of sustainability: green energy technologies and their integration with data-driven smart solutions. Energy Informatics, 3(1), 4. https://doi.org/10.1186/s42162-020-00107-7
SID126	Springer	2020	Aufner, P. (2020). The IoT security gap: a look down into the valley between threat models and their implementation. International Journal of Information Security, 19(1), 3-14. https://doi.org/10.1007/s10207-019-00445-y
SID127	Scopus	2020	Rajendran, A., & Rajappa, M. (2020). Topological Ordering Signal Selection Technique for Internet of Things based on Combinational Gate for Visibility Enhancement. Scalable Computing: Practice and Experience, 21(1), 33-40. https://doi.org/10.12694/SCPE.V21I1.1607
SID128	Scopus	2020	Sauer, D., Jumar, R., Lutz, R., Schlachter, T., Schmitt, C., & Hagenmeyer, V. (2020, October). Towards Smart Buildings: A Versatile Acquisition Setup for Indoor Climate Data. In 2020 IEEE PES Innovative Smart Grid Technologies Europe (ISGT-Europe) (pp. 1196-1200). IEEE. https://doi.org/10.1109/ISGT-Europe47291.2020.9248925
SID129	Springer	2020	Ahlström, C., Wachtmeister, J., Nyman, M., Nordenström, A., & Kircher, K. (2020). Using smartphone logging to gain

			insight about phone use in traffic. Cognition, Technology & Work, 22(1), 181-191. https://doi.org/10.1007/s10111-019-00547-6
SID130	Scopus / WoS	2020	Faust, O., Kareem, M., Shenfield, A., Ali, A., & Acharya, U. R. (2020). Validating the robustness of an internet of things based atrial fibrillation detection system. Pattern Recognition Letters, 133, 55-61. https://doi.org/10.1016/j.patrec.2020.02.005
SID131	IEEE	2020	Karaagac, A., Camerlynck, P., Crombez, P., & Hoebeke, J. (2020, June). Viot: voice over internet of things. In 2020 Global Internet of Things Summit (GIoTS) (pp. 1-6). IEEE. https://doi.org/10.1109/GIOTS49054.2020.9119616
SID132	Springer	2021	Andrienko, G., Andrienko, N., Boldrini, C., Caldarelli, G., Cintia, P., Cresci, S., ... & Trasarti, R. (2021). (So) Big Data and the transformation of the city. International Journal of Data Science and Analytics, 11(4), 311-340. https://doi.org/10.1007/s41060-020-00207-3
SID133	Springer	2021	Anthony Jnr, B. (2021). A case-based reasoning recommender system for sustainable smart city development. AI & Society, 36, 159–183. https://doi.org/10.1007/s00146-020-00984-2
SID134	Springer	2021	Haghgoo, M., Dognini, A., Storek, T., Plamanescu, R., Rahe, U., Gheorghe, S., Albu, M., Monti, A., & Müller, D. (2021). A cloud-based service-oriented architecture to unlock smart energy services. Energy Informatics, 4, 8. https://doi.org/10.1186/s42162-021-00143-x
SID135	Springer	2021	Ahmad, I., Noor, R. M., Ahmed, Z., Habiba, U.-e., Akram, N., & García Márquez, F. P. (2021). A cooperative heterogeneous vehicular clustering framework for efficiency improvement. Frontiers of Information Technology & Electronic Engineering, 22(9), 1247–1259.
SID136	Scopus / Springer	2021	Parri, J., Patara, F., Sampietro, S., & Vicario, E. (2021). A framework for model-driven engineering of resilient software-controlled systems. Computing, 103, 589–612. https://doi.org/10.1007/s00607-020-00841-6
SID137	Scopus	2021	Vaccari, I., Orani, V., Paglialonga, A., Cambiaso, E., & Mongelli, M. (2021). A generative adversarial network (GAN) technique for Internet of Medical Things data. Sensors, 21(11), 3726. https://doi.org/10.3390/s21113726
SID138	Scopus	2021	Javeed, D., Gao, T., Khan, M. T., & Ahmad, I. (2021). A hybrid deep learning-driven SDN enabled mechanism for secure communication in Internet of Things (IoT). Sensors, 21(14), 4884. https://doi.org/10.3390/s21144884
SID139	Scopus	2021	Meng, X., Xu, J., Liang, W., Xu, Z., & Li, K.-C. (2021). A lightweight anonymous cross-regional mutual authentication scheme using blockchain technology for internet of vehicles. Computers & Electrical Engineering, 95, 107431. https://doi.org/10.1016/j.compeleceng.2021.107431
SID140	IEEE	2021	Ramson, S. J., Vishnu, S., Kirubaraj, A. A., Anagnostopoulos, T., & Abu-Mahfouz, A. M. (2021). A LoRaWAN IoT-enabled trash bin level monitoring system. IEEE Transactions on Industrial Informatics, 18(2), 786-795. https://doi.org/10.1109/TII.2021.3078556
SID141	IEEE / Scopus	2021	Sreevidya, P., Abhilash, C. S., Paul, J., & Rejithkumar, G. (2021, January). A machine learning-based early landslide warning system using IoT. In 2021 4th Biennial International Conference on Nascent Technologies in Engineering (ICNTE) (pp. 1-6). IEEE. https://doi.org/10.1109/ICNTE51185.2021.9487669
SID142	IEEE / Scopus	2021	Amato, F., Cozzolino, G., Moscato, F., Moscato, V., & Xhafa, F. (2021). A model for verification and validation of law compliance of smart contracts in IoT environment. IEEE Transactions on Industrial Informatics, 17(11), 7752-7759. https://doi.org/10.1109/TII.2021.3057595
SID143	IEEE	2021	Asare, B. T., Quist-Aphetsi, K., Nana, L., & Simpson, G. (2021, December). A nodal authentication iot data model for heterogeneous connected sensor nodes within a blockchain network. In 2021 International Conference on Cyber Security and Internet of Things (ICSIoT) (pp. 65-71). IEEE. https://doi.org/10.1109/ICSIoT55070.2021.00021
SID144	IEEE	2021	Khan, R., McLaughlin, K., Kang, B., Laverty, D., & Sezer, S. (2021, July). A novel edge security gateway for end-to-end protection in industrial internet of things. In 2021 IEEE Power & Energy Society General Meeting (PESGM) (pp. 1-5). IEEE. https://doi.org/10.1109/PESGM46819.2021.9638002
SID145	IEEE	2021	Hussain, S., Ullah, S. S., Gumaei, A., Al-Rakhami, M., Ahmad, I., & Arif, S. M. (2021). A novel efficient certificateless signature scheme for the prevention of content poisoning attack in named data networking-based internet of things. IEEE access, 9, 40198-40215. https://doi.org/10.1109/ACCESS.2021.3063490
SID146	Springer	2021	Madsen, S. S., Santos, A. Q., & Jørgensen, B. N. (2021). A QR code based framework for auto-configuration of IoT sensor networks in buildings. Energy Inform. https://doi.org/10.1186/s42162-021-00152-w
SID147	Scopus	2021	Zhang, Y., Chen, Z., Tian, H., Kido, K., Ono, N., Chen, W., ... & Huang, M. (2021). A Real-Time Portable IoT System for Telework Tracking. Frontiers in Digital Health, 3, 643042. https://doi.org/10.3389/fdgth.2021.643042
SID148	Scopus	2021	Mahajan, S., Gabrys, J., & Armitage, J. (2021). Airkit: A citizen-sensing toolkit for monitoring air quality. Sensors, 21(12), 4044. https://doi.org/10.3390/s21124044
SID149	Scopus	2021	Son, S. O., Park, J., Oh, C., & Yeom, C. (2021). An algorithm for detecting collision risk between trucks and pedestrians in the connected environment. Journal of advanced transportation, 2021(1), 9907698. https://doi.org/10.1155/2021/9907698
SID150	Springer	2021	Repetto, M., Striccoli, D., Piro, G., Carrega, A., Boggia, G., & Bolla, R. (2021). An autonomous cybersecurity framework for next-generation digital service chains. Journal of Network and Systems Management, 29(4), 37. https://doi.org/10.1007/s10922-021-09607-7
SID151	Springer	2021	Croatti, A., Montagna, S., Lombardi, C., Parati, G., Pengo, M. F., & Silvani, A. (2021). An Internet of Medical Things System to Increase Continuous Positive Airway Pressure Usage in Patients with Sleep-Disordered Breathing. SN Computer Science, 2(2), 117. https://doi.org/10.1007/s42979-021-00522-x
SID152	IEEE	2021	Sakti, W. W., Anam, K., Utomo, S. B., Marhaenanto, B., & Nahela, S. (2021, October). Artificial intelligence IoT based EEG application using deep learning for movement classification. In 2021 8th International Conference on Electrical Engineering, Computer Science and Informatics (EECSI) (pp. 192-196). IEEE. https://doi.org/10.23919/EECSI53397.2021.9624269
SID153	IEEE	2021	Kashif, M., & Kalkan, K. (2021, November). BCPriPIoT: BlockChain utilized privacy-preservation mechanism for IoT devices. In 2021 Third international conference on blockchain computing and applications (BCCA) (pp. 201-209). IEEE. https://doi.org/10.1109/BCCA53669.2021.9657016
SID154	IEEE	2021	de Lope, L. R., Choque, J., Sandaza, A. S., Valdes, J. F., Terzi, S., Votis, K., ... & Muñoz, L. (2021, June). Boosting IoT data valorization through the adoption of DLT. In 2021 IEEE International Conference on Communications Workshops (ICC Workshops) (pp. 1-5). IEEE. https://doi.org/10.1109/ICCWorkshops50388.2021.9473741
SID155	IEEE	2021	Reátegui, J. L., & Herrera, P. C. (2021, August). Customized IoT devices for the architectural education future in

			connectivity for smart cities. In 2021 2nd Sustainable Cities Latin America Conference (SCLA) (pp. 1-6). IEEE. https://doi.org/10.1109/SCLA53004.2021.9540124
SID156	IEEE	2021	Sharifi, A. Z., Vanijja, V., Pal, D., & Anantasabkit, W. (2021, December). CyberIoT: An initial conceptualization of a web-based cyber range for IoT. In 2021 international conference on computational performance evaluation (comPE) (pp. 091-096). IEEE. https://doi.org/10.1109/ComPE53109.2021.9752401
SID157	IEEE	2021	Alvarenga, I. D., Camilo, G. F., De Souza, L. A., & Duarte, O. C. M. (2021, December). DAGSec: A hybrid distributed ledger architecture for the secure management of the Internet of Things. In 2021 IEEE International Conference on Blockchain (Blockchain) (pp. 266-271). IEEE. https://doi.org/10.1109/Blockchain53845.2021.00043
SID158	IEEE	2021	Rahmantyo, D. T., Erfianto, B., & Satrya, G. B. (2021, September). Deep residual cnn for preventing botnet attacks on the internet of things. In 2021 4th International Conference of Computer and Informatics Engineering (IC2IE) (pp. 462-466). IEEE. https://doi.org/10.1109/IC2IE53219.2021.9649314
SID159	Scopus	2021	Ramanathan, G., Husmann, M., & Mayer, S. (2021, November). Web of Things in Building Automation. In Proceedings of the 11th International Conference on the Internet of Things (pp. 181-184). https://doi.org/10.1145/3494322.3494355
SID160	Scopus	2021	Nagy, S. J., Szabó, R., Vajda, M. L., & Vörös, A. (2021, November). Demonstrator for dependable edge-based cyber-physical systems. In 2021 10th Latin-American Symposium on Dependable Computing (LADC) (pp. 1-8). IEEE. https://doi.org/10.1109/LADC53747.2021.9672569
SID161	IEEE	2021	Bo, L., Zhang, Z., Liu, Y., Zhu, D., & Yue, Y. (2021, December). Design and implementation of an experimental platform for online monitoring of mine water based on the internet of things. In 2021 2nd International Conference on Electronics, Communications and Information Technology (CECIT) (pp. 437-442). IEEE. https://doi.org/10.1109/CECIT53797.2021.00083
SID162	Scopus	2021	Liu, Y., Wang, X., She, X., Yi, M., Li, Y., & Jiang, F. (2021). Design of intelligent mosquito nets based on deep learning algorithms. https://doi.org/10.32604/cmc.2021.015501
SID163	IEEE	2021	Shallari, I., Leal, I. S., Krug, S., Jantsch, A., & O'Nils, M. (2021). Design space exploration for an IoT node: Trade-offs in processing and communication. IEEE Access, 9, 65078-65090. https://doi.org/10.1109/ACCESS.2021.3074875
SID164	IEEE	2021	Saleem, M. U., Usman, M. R., & Shakir, M. (2021). Design, implementation, and deployment of an IoT based smart energy management system. IEEE Access, 9, 59649-59664. https://doi.org/10.1109/ACCESS.2021.3070960
SID165	Scopus	2021	Lopes, S. I., Nunes, L. J., & Curado, A. (2021). Designing an indoor radon risk exposure indicator (IRREI): an evaluation tool for risk management and communication in the IoT age. International journal of environmental research and public health, 18(15), 7907. https://doi.org/10.3390/ijerph18157907
SID166	IEEE	2021	Krishnaswamy, D., Bhardwaj, N., & Srivastava, S. (2021, June). Distc: Distributed quantum-safe consensus for secure iot data processing. In 2021 IEEE International Conference on Communications Workshops (ICC Workshops) (pp. 1-6). IEEE. https://doi.org/10.1109/ICCWorkshops50388.2021.9473875
SID167	IEEE	2021	Michaelides, C., Adame, T., & Bellalta, B. (2021, December). ECTS: Enhanced centralized TSCH scheduling with packet aggregation for Industrial IoT. In 2021 IEEE Conference on Standards for Communications and Networking (CSCN) (pp. 40-45). IEEE. https://doi.org/10.1109/CSCN53733.2021.9686162
SID168	Scopus	2021	Yuhas, M., Feng, Y., Ng, D. J. X., Rahiminasab, Z., & Easwaran, A. (2021, May). Embedded out-of-distribution detection on an autonomous robot platform. In Proceedings of the Workshop on Design Automation for CPS and IoT (pp. 13-18). https://doi.org/10.1145/3445034.3460509
SID169	IEEE / Scopus	2021	Zonios, C., & Tenentes, V. (2021, July). Energy efficient speech command recognition for private smart home iot applications. In 2021 10th International Conference on Modern Circuits and Systems Technologies (MOCAST) (pp. 1-4). IEEE. https://doi.org/10.1109/MOCAST52088.2021.9493392
SID170	Scopus	2021	Găitan, V. G., & Zagan, I. (2021). Experimental implementation and performance evaluation of an IoT access gateway for the modbus extension. Sensors, 21(1), 246. https://doi.org/10.3390/s21010246
SID171	Scopus	2021	Medjek, F., Tandjaoui, D., Djedjig, N., & Romdhani, I. (2021). Fault-tolerant AI-driven intrusion detection system for the internet of things. International Journal of Critical Infrastructure Protection, 34, 100436. https://doi.org/10.1016/j.ijcip.2021.100436
SID172	Scopus	2021	Lilli, M., Braghin, C., & Riccobene, E. (2021, July). Formal Proof of a Vulnerability in Z-Wave IoT Protocol. In SECRYPT (pp. 198-209). https://doi.org/10.5220/0010553301980209
SID173	IEEE	2021	Tehseen, A., Zafar, N. A., & Ali, T. (2021, September). Graph Theory-Based Formal Modeling of Forest Fire Management System using IoT and Drone. In 2021 International Conference on Communication Technologies (ComTech) (pp. 132-137). IEEE. https://doi.org/10.1109/ComTech52583.2021.9616876
SID174	Springer	2021	Howard, D. A., Ma, Z., Veje, C., Clausen, A., Aaslyng, J. M., & Jørgensen, B. N. (2021). Greenhouse industry 4.0–digital twin technology for commercial greenhouses. Energy Informatics, 4, 1-13. https://doi.org/10.1186/s42162-021-00161-9
SID175	IEEE	2021	Sanchez-Gomez, J., Marin-Perez, R., Ross, M., & Gomez, A. F. S. (2021, August). Holistic IoT architecture for secure lightweight communication, firmware update, and trust monitoring. In 2021 IEEE International Conference on Smart Internet of Things (SmartIoT) (pp. 353-358). IEEE. https://doi.org/10.1109/SmartIoT52359.2021.00066
SID176	Scopus	2021	Song, Q., & Li, L. (2021). Home Robot Control System Based on Internet of Things and Fuzzy Control. Mobile Information Systems, 2021(1), 9409556. https://doi.org/10.1155/2021/9409556
SID177	Scopus	2021	Noura, M., Gyrard, A., Klotz, B., Troncy, R., Datta, S. K., & Gaedke, M. (2021). How to Understand Better "Smart Vehicle"? Knowledge Extraction for the Automotive Sector Using Web of Things. Semantic IoT: Theory and Applications: Interoperability, Provenance and Beyond, 303-321. https://doi.org/10.1007/978-3-030-64619-6_13
SID178	Springer	2021	Qin, J., Li, Z., Wang, R., Li, L., Yu, Z., He, X., & Liu, Y. (2021). Industrial Internet of Learning (IIoL): IIoT based pervasive knowledge network for LPWAN—concept, framework and case studies. CCF Transactions on Pervasive Computing and Interaction, 3(1), 25-39. https://doi.org/10.1007/s42486-020-00050-2
SID179	IEEE	2021	AI-Okby, M. F. R., Neubert, S., Roddelkopf, T., & Thurow, K. (2021, November). Integration and testing of novel MOX gas sensors for IoT-based indoor air quality monitoring. In 2021 IEEE 21st International Symposium on Computational Intelligence and Informatics (CINTI) (pp. 000173-000180). IEEE. https://doi.org/10.1109/CINTI53070.2021.9668462
SID180	Scopus	2021	Shakeel, P. M., Baskar, S., Fouad, H., Manogaran, G., Saravanan, V., & Montenegro-Marin, C. E. (2021). Internet of things forensic data analysis using machine learning to identify roots of data scavenging. Future Generation Computer Systems, 115, 756-768. https://doi.org/10.1016/j.future.2020.10.001

SID181	IEEE	2021	Mir, M. N. H., Kayesh, N. I., Khan, T. M., & Sattar, A. (2021, March). IoT based digital toll collection system: A perspective. In 2021 International Conference on Artificial Intelligence and Smart Systems (ICAIS) (pp. 1406-1410). IEEE. https://doi.org/10.1109/ICAIS50930.2021.9395996
SID182	IEEE	2021	Shafi, M. K. I., Sultan, M. R., Rahman, S. M. M., & Hoque, M. M. (2021, December). IoT based smart home: a machine learning approach. In 2021 24th International Conference on Computer and Information Technology (ICCIT) (pp. 1-6). IEEE. https://doi.org/10.1109/ICCIT54785.2021.9689786
SID183	IEEE	2021	Rai, R. S., Indumathi, S. K., Pritima, D., & Rani, S. S. (2021, November). IoT secure framework for wearable sensor data for e-health system. In 2021 Fifth International Conference on I-SMAC (IoT in Social, Mobile, Analytics and Cloud)(I-SMAC) (pp. 211-215). IEEE. https://doi.org/10.1109/I-SMAC52330.2021.9640977
SID184	Scopus	2021	Gupta, A., & Al-Anbuky, A. (2021). IoT-based patient movement monitoring: the post-operative hip fracture rehabilitation model. Future Internet, 13(8), 195. https://doi.org/10.3390/fi13080195
SID185	IEEE	2021	Pal, P., Parvathy, A. K., Devabalaji, K. R., Antony, S. J., Ocheme, S., Babu, T. S., ... & Yuvaraj, T. (2021). IoT-based real time energy management of virtual power plant using PLC for Transactive energy framework. IEEE Access, 9, 97643-97660. https://doi.org/10.1109/ACCESS.2021.3093111
SID186	Scopus	2021	Sekine, H., Kanai, K., Katto, J., Kanemitsu, H., & Nakazato, H. (2021, January). Iot-centric service function chainingorchestration and its performance validation. In 2021 IEEE 18th Annual Consumer Communications & Networking Conference (CCNC) (pp. 1-4). IEEE. https://doi.org/10.1109/CCNC49032.2021.9369538
SID187	IEEE / Scopus	2021	Baccarelli, E., Scarpiniti, M., Momenzadeh, A., & Ahrabi, S. S. (2021). Learning-in-the-fog (LiFo): Deep learning meets fog computing for the minimum-energy distributed early-exit of inference in delay-critical IoT realms. IEEE Access, 9, 25716-25757. https://doi.org/10.1109/ACCESS.2021.3058021
SID188	Scopus	2021	Zaric, N., Spalevic, V., Bulatovic, N., Pavlicevic, N., & Dudic, B. (2021). Measurement of air pollution parameters in montenegro using the ecomar system. International Journal of Environmental Research and Public Health, 18(12), 6565. https://doi.org/10.3390/ijerph18126565
SID189	IEEE	2021	Lawson, V. J., & Banerjee, M. (2021, November). Measuring the Impact of an IoT Temperature Sensor Framework for Tracking Contagious Diseases. In 2021 IEEE 5th International Conference on Information Technology, Information Systems and Electrical Engineering (ICITISEE) (pp. 332-337). IEEE. https://doi.org/10.1109/ICITISEE53823.2021.9655853
SID190	Springer	2021	Yin, Y., Lin, J., Sun, N., Zhu, Q., Zhang, S., Zhang, Y., & Liu, M. (2021). Method for detection of unsafe actions in power field based on edge computing architecture. Journal of Cloud Computing, 10, 1-14. https://doi.org/10.1186/s13677-021-00234-w
SID191	Springer	2021	Ullah, A., Dagdeviren, H., Ariyattu, R. C., DesLauriers, J., Kiss, T., & Bowden, J. (2021). Micado-edge: Towards an application-level orchestrator for the cloud-to-edge computing continuum. Journal of Grid Computing, 19(4), 47. https://doi.org/10.1007/s10723-021-09589-5
SID192	IEEE / Scopus	2021	Sharanappa, P. H., & Kakkasageri, M. S. (2021, October). Multiagent based Information Validation Scheme in Internet of Things. In 2021 International Conference on Smart Generation Computing, Communication and Networking (SMART GENCON) (pp. 1-5). IEEE. https://doi.org/10.1109/SMARTGENCON51891.2021.9645776
SID193	IEEE	2021	da Silveira, J. D. F., Martins, T. R., da Silva, C. N., & dos Reis, J. V. (2021, July). New solution based on fuzzy system for planning iot communication infrastructure for rural areas. In 2021 IEEE International Conference on Fuzzy Systems (FUZZ-IEEE) (pp. 1-6). IEEE. https://doi.org/10.1109/FUZZ45933.2021.9494578
SID194	IEEE	2021	Gabsi, S., Kortli, Y., Beroulle, V., Kieffer, Y., Alasiry, A., & Hamdi, B. (2021). Novel ECC-based RFID mutual authentication protocol for emerging IoT applications. IEEE access, 9, 130895-130913. https://doi.org/10.1109/ACCESS.2021.3112554
SID195	Springer	2021	Klikovits, S., & Buchs, D. (2021). Pragmatic reuse for DSML development: Composing a DSL for hybrid CPS modeling. Software and Systems Modeling, 20(3), 837-866. https://doi.org/10.1007/s10270-020-00831-4
SID196	IEEE	2021	Atitallah, N., Hakim, H., & Abid, M. (2021, June). Prototyping of an efficient and energy-aware IoT-based sensor node for water pipeline monitoring. In 2021 International Wireless Communications and Mobile Computing (IWCMC) (pp. 2115-2120). IEEE. https://doi.org/10.1109/IWCMC51323.2021.9498932
SID197	Springer	2021	Calvaresi, D., Dicente Cid, Y., Marinoni, M., Dragoni, A. F., Najjar, A., & Schumacher, M. (2021). Real-time multi-agent systems: rationality, formal model, and empirical results. Autonomous agents and multi-agent systems, 35(1), 12. https://doi.org/10.1007/s10458-020-09492-5
SID198	Scopus	2021	Darvishi, H., Ciuonzo, D., & Rossi, P. S. (2021, December). Real-time sensor fault detection, isolation and accommodation for industrial digital twins. In 2021 IEEE International Conference on Networking, Sensing and Control (ICNSC) (Vol. 1, pp. 1-6). IEEE. https://doi.org/10.1109/ICNSC52481.2021.9702175
SID199	Springer	2021	Ngamboé, M., Berthier, P., Ammari, N., Dyrda, K., & Fernandez, J. M. (2021). Risk assessment of cyber-attacks on telemetry-enabled cardiac implantable electronic devices (CIED). International Journal of Information Security, 20, 621-645. https://doi.org/10.1007/s10207-020-00522-7
SID200	Scopus	2021	Priya, V., Thaseen, I. S., Gadekallu, T. R., Aboudaif, M. K., & Nasr, E. A. (2021). Robust attack detection approach for IIoT using ensemble classifier. arXiv preprint arXiv:2102.01515. https://doi.org/10.32604/cmc.2021.013852
SID201	Springer	2021	Howell, S., Beach, T., & Rezgui, Y. (2021). Robust requirements gathering for ontologies in smart water systems. Requirements Engineering, 26(1), 97-114. https://doi.org/10.1007/s00766-020-00335-z
SID202	Scopus	2021	Shi, M., Chen, Q., Li, H., Wei, G., Yang, X., & Wang, H. (2021, May). SD-MIRS: SDN-based Multi-Identifier Routing Strategy. In Proceedings of the 2021 2nd International Conference on Computing, Networks and Internet of Things (pp. 1-6). https://doi.org/10.1145/3468691.3468695
SID203	IEEE	2021	Shodiq, F. A., Pahlevi, R. R., & Sukarno, P. (2021, December). Secure mqtt authentication and message exchange methods for iot constrained device. In 2021 International Conference on Intelligent Cybernetics Technology & Applications (ICICyTA) (pp. 70-74). IEEE. https://doi.org/10.1109/ICICyTA53712.2021.9689126
SID204	Springer	2021	Risco, S., Moltó, G., Naranjo, D. M., & Blanquer, I. (2021). Serverless workflows for containerised applications in the cloud continuum. Journal of Grid Computing, 19, 1-18. https://doi.org/10.1007/s10723-021-09570-2
SID205	Scopus	2021	Zhao, Y., Ge, S., & Feng, Y. (2021). RETRACTED: Smart IoT data platform in hospital and postoperative analgesic effects of orthopedic patients. https://doi.org/10.1016/j.micpro.2020.103653

SID206	Scopus	2021	Bertoli, A., Cervo, A., Rosati, C. A., & Fantuzzi, C. (2021). Smart node networks orchestration: a new e2e approach for analysis and design for agile 4.0 implementation. Sensors, 21(5), 1624. https://doi.org/10.3390/s21051624
SID207	Springer	2021	Yan, Z., Cao, W., & Ji, J. (2021). Social behavior prediction with graph U-Net+. Discover Internet of Things, 1, 1-18. https://doi.org/10.1007/s43926-021-00018-3
SID208	Springer	2021	Ferrara, P., Mandal, A. K., Cortesi, A., & Spoto, F. (2021). Static analysis for discovering IoT vulnerabilities. International Journal on Software Tools for Technology Transfer, 23(1), 71-88. https://doi.org/10.1007/s10009-020-00592-x
SID209	IEEE	2021	Hasan, D., & Driss, M. (2021, November). SUBLμME: Secure blockchain as a service and microservices-based framework for IoT environments. In 2021 IEEE/ACS 18th International Conference on Computer Systems and Applications (AICCSA) (pp. 1-9). IEEE. https://doi.org/10.1109/AICCSA53542.2021.9686757
SID210	IEEE	2021	Silva, H. D. A., Adriano, E., Scatolini, D., & Braga, R. T. V. (2021, June). Supporting IoT-based applications to combat the Aedes aegypti mosquito: a case in Brazil. In 2021 IEEE 34th International Symposium on Computer-Based Medical Systems (CBMS) (pp. 330-335). IEEE. https://doi.org/10.1109/CBMS52027.2021.00029
SID211	Springer	2021	Li, Z., Millar-Bilbao, F., Rojas-Durán, G., & Ladra, S. (2021). Take one for the team: on the time efficiency of application-level buffer-aided relaying in edge cloud communication. Journal of Cloud Computing, 10, 1-18. https://doi.org/10.1186/s13677-021-00241-x
SID212	Scopus	2021	Pop, P., Zarrin, B., Barzegaran, M., Schulte, S., Punnekkat, S., Ruh, J., & Steiner, W. (2021). The FORA fog computing platform for industrial IoT. Information Systems, 98, 101727. https://doi.org/10.1016/j.is.2021.101727
SID213	Springer	2021	Tusa, F., & Clayman, S. (2021). The impact of encoding and transport for massive real-time IoT data on edge resource consumption. Journal of Grid Computing, 19(3), 32. https://doi.org/10.1007/s10723-021-09577-9
SID214	IEEE	2021	Bălăceanu, C., Negoiță, A., Drăgulinescu, A. M., Roșcăneanu, R., Chedea, V. S., & Suciu, G. (2021, May). The use of IoT technology in Smart Viticulture. In 2021 23rd International Conference on Control Systems and Computer Science (CSCS) (pp. 362-369). IEEE. https://doi.org/10.1109/CSCS52396.2021.00066
SID215	Springer	2021	Tomarchio, O., Calcaterra, D., Di Modica, G., & Mazzaglia, P. (2021). Torch: a tosca-based orchestrator of multi-cloud containerised applications. Journal of Grid Computing, 19(1), 5. https://doi.org/10.1007/s10723-021-09549-z
SID216	Scopus	2021	Sudharsan, B., Patel, P., Breslin, J., Ali, M. I., Mitra, K., Dustdar, S., ... & Ranjan, R. (2021). Toward distributed, global, deep learning using iot devices. IEEE Internet Computing, 25(3), 6-12. https://doi.org/10.1109/MIC.2021.3053711
SID217	Springer	2021	Sirjani, M., Provenzano, L., Asadollah, S. A., Moghadam, M. H., & Saadatmand, M. (2021). Towards a verification-driven iterative development of software for safety-critical cyber-physical systems. Journal of Internet Services and Applications, 12(1), 2. https://doi.org/10.1186/s13174-021-00132-z
SID218	IEEE	2021	Agajo, J., Thomas, S., Gafai, N., Lukman, A. A., Obadiah, N. A., & Okafor, K. C. (2021, July). Towards Prediction model for iot-wireless sensor network packet transmission using soft computing technique. In 2021 1st International Conference on Multidisciplinary Engineering and Applied Science (ICMEAS) (pp. 1-4). IEEE. https://doi.org/10.1109/ICMEAS52683.2021.9692316
SID219	IEEE	2021	Boutot, P., Tabassum, M. R., & Mustafiz, S. (2021, October). UCM4IoT: A use case modelling environment for IoT systems. In 2021 ACM/IEEE International Conference on Model Driven Engineering Languages and Systems Companion (MODELS-C) (pp. 767-776). IEEE. https://doi.org/10.1109/MODELS-C53483.2021.00123
SID220	Scopus	2021	Kaur, B., Dadkhah, S., Xiong, P., Iqbal, S., Ray, S., & Ghorbani, A. A. (2021, December). Verification based scheme to restrict iot attacks. In Proceedings of the 2021 IEEE/ACM 8th International Conference on Big Data Computing, Applications and Technologies (pp. 63-68). https://doi.org/10.1145/3492324.3494170
SID221	IEEE	2022	da Silva, D. C., de Sousa, M. A. F., Bressan, G., & Silveira, R. M. (2022). 5G network slice selector in IoT services scenarios with QoS requirements guarantee. 2022 IEEE Wireless Communications and Networking Conference (WCNC) (pp. 90–95). IEEE. https://doi.org/10.1109/WCNC51071.2022.9771744
SID222	Springer	2022	Marchese, A., & Tomarchio, O. (2022). A blockchain-based system for agri-food supply chain traceability management. SN Computer Science, 3, 279. https://doi.org/10.1007/s42979-022-01148-3
SID223	IEEE	2022	Cheng, X., Tian, W., Shi, F., Zhao, M., Chen, S., & Wang, H. (2022). A blockchain-empowered cluster-based federated learning model for blade icing estimation on IoT-enabled wind turbine. IEEE Transactions on Industrial Informatics, 18(12), 9184–9195. https://doi.org/10.1109/TII.2022.3159684
SID224	IEEE	2022	Al-Maani, M., Frisbie, G., Shippy, F., Tiseo, M., Darwish, O., & Abualkibash, M. (2022). A classifier to detect number of machines performing DoS attack against Arduino Oplà device in IoT environment. In 2022 5th International Conference on Advanced Communication Technologies and Networking (CommNet) (pp. 1–9). IEEE. https://doi.org/10.1109/CommNet56067.2022.9993816
SID225	IEEE	2022	Ahluwalia, J. K., Mouradian, C., Alam, M. N., & Glitho, R. H. (2022). A cloud infrastructure as a service for an efficient usage of sensing and actuation capabilities in Internet of Things. In Proceedings of the 2022 IEEE/IFIP Network Operations and Management Symposium (NOMS) (pp. 1–6). IEEE. https://doi.org/10.1109/NOMS54207.2022.9789805
SID226	Springer	2022	Coccoli, M., De Francesco, V., Fusco, A., & Maresca, P. (2022). A cloud-based cognitive computing solution with interoperable applications to counteract illegal dumping in smart cities. Multimedia Tools and Applications, 81, 95–113. https://doi.org/10.1007/s11042-021-11238-8
SID227	IEEE	2022	Nagdewani, H., & Mehra, P. S. (2022). A complete Internet of Things based home security system. In 2022 Second International Conference on Computer Science, Engineering and Applications (ICCSEA) (pp. 348–352). IEEE. https://doi.org/10.1109/ICCSEA54677.2022.9936168
SID228	IEEE / Scopus	2022	Yin, F., & Fu, Z. (2022). A data provenance scheme based on blockchain for Internet of Things. In 2022 2nd International Conference on Computer Science and Blockchain (CCSB) (pp. 42–45). IEEE. https://doi.org/10.1109/CCSB58128.2022.00014
SID229	IEEE	2022	Avadut, S., & Udgata, S. K. (2022). A deep learning based IoT framework for assistive healthcare using gesture based interface. In 2022 IEEE International Conference on Internet of Things and Intelligence Systems (IoTaIS) (pp. 6–12). IEEE. https://doi.org/10.1109/IoTaIS56727.2022.9975885
SID230	IEEE	2022	Arunprathap, S., Nithya, R., & Nivetha, S. (2022, May). A Fog Computing Architecture Integrating Blockchain and Internet of Things for Securing Bank Accounts. In 2022 International Conference on Applied Artificial Intelligence and Computing (ICAAIC) (pp. 1326-1330). IEEE. https://doi.org/10.1109/ICAAIC53929.2022.9792983
SID231	Springer	2022	Zschörnig, T., Windolph, J., Wehlitz, R., Dumont, Y., & Franczyk, B. (2022). A fog-based multi-purpose Internet of Things

			analytics platform. SN Computer Science, 3, Article 213. https://doi.org/10.1007/s42979-022-01110-3
SID232	Scopus	2022	Nyangaresi, V. O., & Ma, J. (2022). A formally verified message validation protocol for intelligent IoT e-health systems. In 2022 IEEE World Conference on Applied Intelligence and Computing (AIC) (pp. 416–422). IEEE. https://doi.org/10.1109/AIC55036.2022.9848874
SID233	IEEE	2022	Bhattacharya, P., Patel, K., Zuhair, M., & Trivedi, C. (2022). A lightweight authentication via unclonable functions for Industrial Internet-of-Things. In 2022 2nd International Conference on Innovative Practices in Technology and Management (ICIPTM) (pp. 657–662). IEEE. https://doi.org/10.1109/ICIPTM54933.2022.9754198
SID234	Springer	2022	Pérez-Castillo, R., Delgado, A., Ruiz, F., Bacigalupe, V., & Piattini, M. (2022). A method for transforming knowledge discovery metamodel to ArchiMate models. Software And Systems Modeling, 1-26. https://doi.org/10.1007/s10270-021-00912-y
SID235	Scopus / WoS	2022	Aldalur, I., Arrieta, A., Agirre, A., Sagardui, G., & Arratibel, M. (2024). A microservice-based framework for multi-level testing of cyber-physical systems. Software Quality Journal, 32(1), 193-223. https://doi.org/10.1007/s11219-023-09639-z
SID236	Springer	2022	Lin, J., Xie, D., Huang, J., Liao, Z., & Ye, L. (2022). A multi-dimensional extensible cloud-native service stack for enterprises. Journal of Cloud Computing, 11(1), 83. https://doi.org/10.1186/s13677-022-00366-7
SID237	Scopus	2022	Fatimah, B., Singhal, A., & Singh, P. (2022). A multi-modal assessment of sleep stages using adaptive Fourier decomposition and machine learning. Computers in Biology and Medicine, 148, 105877. https://doi.org/10.1016/j.compbiomed.2022.105877
SID238	Springer	2022	Pang, J., Wang, S., Tang, Z., Qin, Y., Tao, X., You, X., & Zhu, J. (2022). A new 5G radio evolution towards 5G-Advanced. Science China Information Sciences, 65(9), 191301. https://doi.org/10.1007/s11432-021-3470-1
SID239	Scopus	2022	Bahaa, A., Sayed, A., Elfangary, L., & Fahmy, H. (2022). A novel hybrid optimization enabled robust CNN algorithm for an IoT network intrusion detection approach. Plos one, 17(12), e0278493. https://doi.org/10.1371/journal.pone.0278493
SID240	IEEE	2022	Shang, S., Li, X., Lu, R., Niu, J., Zhang, X., & Guizani, M. (2022). A privacy-preserving multidimensional range query scheme for edge-supported industrial IoT. IEEE Internet of Things Journal, 9(16), 15285-15296. https://doi.org/10.1109/JIOT.2022.3149638
SID241	Springer	2022	Muschalik, M., Fumagalli, F., Hammer, B., & Hüllermeier, E. (2022). Agnostic explanation of model change based on feature importance. KI-Künstliche Intelligenz, 36(3), 211-224. https://doi.org/10.1007/s13218-022-00766-6
SID242	IEEE / Scopus	2022	Dutta, J., Puthal, D., & Damiani, E. (2022, December). Ai-based block identification and classification in the blockchain integrated iot. In 2022 OITS International Conference on Information Technology (OCIT) (pp. 415-421). IEEE. https://doi.org/10.1109/OCIT56763.2022.00084
SID243	IEEE	2022	Almeida, E. M., Peres, L. M., & L'Erario, A. (2022, October). An Approach to Use Comic Strips To Support IoT Systems Requirements Engineering. In 2022 IEEE Frontiers in Education Conference (FIE) (pp. 1-6). IEEE. https://doi.org/10.1109/FIE56618.2022.9962579
SID244	Scopus	2022	Puli, S., & Chaparala, S. C. (2022). An efficient swift routing model with node trust identity factor (SRM-NTIF) to perform secure data transmission among IoT gadgets. Revue d'Intelligence Artificielle, 36(1), 31. https://doi.org/10.18280/ria.360104
SID245	IEEE	2022	Passos, J. M., Lopes, S. I., Moreira, P. M., Clemente, F. M., Bezerra, P., Silva, R., & Rodrigues, L. P. (2022, July). An IoT-enabled Portable System for Field-based Endurance Run Testing. In 2022 IEEE International Workshop on Sport, Technology and Research (STAR) (pp. 7-12). IEEE. https://doi.org/10.1109/STAR53492.2022.9859636
SID246	Scopus	2022	Muhammad, Y., Almoteri, M., Mujlid, H., Alharbi, A., Alqurashi, F., Dutta, A. K., ... & Almohamedh, H. (2022). [Retracted] An ML-Enabled Internet of Things Framework for Early Detection of Heart Disease. BioMed research international, 2022(1), 3372296. https://doi.org/10.1155/2022/3372296
SID247	IEEE	2022	Pallivalappil, A. S., Ahmad, S. S., Raju, Y., Kumar, C. K., & Krishnaiah, N. (2022, April). Applications of Ensuring Security and Privacy Using Block Chain with IoT for Health Record. In 2022 2nd International Conference on Advance Computing and Innovative Technologies in Engineering (ICACITE) (pp. 1911-1917). IEEE. https://doi.org/10.1109/ICACITE53722.2022.9823735
SID248	IEEE	2022	Vangala, A., Roy, S., & Das, A. K. (2022, November). Blockchain-based lightweight authentication protocol for IoT-enabled smart agriculture. In 2022 International Conference on Cyber-Physical Social Intelligence (ICCSI) (pp. 110-115). IEEE. https://doi.org/10.1109/ICCSI55536.2022.9970603
SID249	Springer	2022	Khan, K. M., Arshad, J., Iqbal, W., Abdullah, S., & Zaib, H. (2022). Blockchain-enabled real-time SLA monitoring for cloud-hosted services. Cluster Computing, 1-23. https://doi.org/10.1007/s10586-021-03416-y
SID250	IEEE	2022	Feng, H., Cui, Z., & Yang, T. (2022, March). Cache optimization strategy for mobile edge computing in maritime IoT. In 2022 5th Conference on Cloud and Internet of Things (CIoT) (pp. 213-219). IEEE. https://doi.org/10.1109/CIoT53061.2022.9766604
SID251	IEEE / Scopus	2022	Ullah, I., Alomari, A., Abdullah, A. M., Kumar, N., Alsirhani, A., Noor, F., ... & Khan, M. A. (2022). Certificate-based signcryption scheme for securing wireless communication in industrial internet of things. IEEE Access, 10, 105182-105194. https://doi.org/10.1109/ACCESS.2022.3211257
SID252	IEEE	2022	Sharma, A. (2022, September). Civic centered heuristic early warning system fashioned using artificial intelligence and Internet of Things. In 2022 Second International Conference on Computer Science, Engineering and Applications (ICCSEA) (pp. 1-6). IEEE. https://doi.org/10.1109/ICCSEA54677.2022.9936300
SID253	Scopus	2022	Haq, A. U., Li, J. P., Khan, I., Agbley, B. L. Y., Ahmad, S., Uddin, M. I., ... & Alam, I. (2022). DEBCM: deep learning-based enhanced breast invasive ductal carcinoma classification model in IoMT healthcare systems. IEEE Journal of Biomedical and Health Informatics, 28(3), 1207-1217. https://doi.org/10.1109/JBHI.2022.3228577
SID254	Springer	2022	Zampognaro, P., Paragliola, G., & Falanga, V. (2022). Definition of an FHIR-based multiprotocol IoT home gateway to support the dynamic plug of new devices within instrumented environments. Journal of Reliable Intelligent Environments, 1-13. https://doi.org/10.1007/s40860-021-00161-2
SID255	Scopus	2022	Melero-Muñoz, F. J., Bueno-Delgado, M. V., Martínez-Carreras, R., Maestre-Ferriz, R., Beteta-Medina, M. Á., Puebla-Martínez, T., ... & Álvarez-Leon, M. (2022). Design and development of a heterogeneous active assisted living solution for monitoring and following up with chronic heart failure patients in Spain. Sensors, 22(22), 8961. https://doi.org/10.3390/s22228961
SID256	IEEE	2022	Silapunt, R., Panpanyatep, W., & Boonsothonsatit, G. (2022, March). Design and development of the smart object for the

			IoT-enabled smart warehouse. In 2022 International Electrical Engineering Congress (iEECON) (pp. 1-4). IEEE. https://doi.org/10.1109/iEECON53204.2022.9741566
SID257	IEEE	2022	Bhavani, G. L., Ramu, M., Gupta, S., Akula, S. P., Gomathi, S., & Yadav, A. (2022, April). Development and Performance Evaluation of a Blockchain Associated E-Voting System in IoT-Enabled Smart-Cities. In 2022 3rd International Conference on Intelligent Engineering and Management (ICIEM) (pp. 935-941). IEEE. https://doi.org/10.1109/ICIEM54221.2022.9853068
SID258	IEEE	2022	Al Momani, M. M. A., & Puttaswamy, P. S. (2022, December). Development of Secured Authentication Contract Communication Network Protocol for IoT Environment. In 2022 Fourth International Conference on Emerging Research in Electronics, Computer Science and Technology (ICERECT) (pp. 1-6). IEEE. https://doi.org/10.1109/ICERECT56837.2022.10060005
SID259	Springer	2022	Pérez, J., Díaz, J., Berrocal, J., López-Viana, R., & González-Prieto, A. (2022). Edge computing: A grounded theory study. Computing, 104(12), 2711-2747. https://doi.org/10.1007/s00607-022-01104-2
SID260	IEEE	2022	Amutha, R., Damodar, N., Sivasankari, G. G., & Kalshetty, J. N. (2022, October). Embedded Based Health Monitoring Secure System on IoT with Artificial Intelligence. In 2022 IEEE 2nd Mysore Sub Section International Conference (MysuruCon) (pp. 1-8). IEEE. https://doi.org/10.1109/MysuruCon55714.2022.9972696
SID261	IEEE	2022	Guo, X., & Wu, X. (2022, October). Entrepreneurial Optimization Sharing Platform Based on IoT and AI Algorithms. In 2022 International Conference on Artificial Intelligence of Things and Crowdsensing (AIoTCs) (pp. 250-255). IEEE. https://doi.org/10.1109/AIoTCs58181.2022.00045
SID262	ACM	2022	Hakim, I. M., Singgih, M. L., & Gunarta, I. K. (2022, September). Evaluating critical success factors for implementation of internet of things (IoT) using DEMATEL: A case of Indonesian automotive company. In Proceedings of the 2022 international conference on engineering and information technology for sustainable industry (pp. 1-7). https://doi.org/10.1145/3557738.3557867
SID263	Scopus	2022	Mehta, M., & Patel, K. (2022). Experimental study of location spoofing and identity spoofing attack in internet of things network. International Journal of Intelligent Information Technologies (IJIIT), 18(3), 1-13. https://doi.org/10.4018/IJIIT.309587
SID264	IEEE / Scopus	2022	Cardenas, H., Zimmerman, R., Viesca, A. R., Al Lail, M., & Perez, A. J. (2022, October). Formal UML-based modeling and analysis for securing location-based IoT applications. In 2022 IEEE 19th International Conference on Mobile Ad Hoc and Smart Systems (MASS) (pp. 722-723). IEEE. https://doi.org/10.1109/MASS56207.2022.00109
SID265	IEEE / Scopus	2022	Erfan, F., Bellaiche, M., & Halabi, T. (2022, August). Game-theoretic designs for blockchain-based iot: Taxonomy and research directions. In 2022 IEEE International Conference on Decentralized Applications and Infrastructures (DAPPS) (pp. 27-37). IEEE. https://doi.org/10.1109/DAPPS55202.2022.00012
SID266	IEEE	2022	Pour, M. S., Khoury, J., & Bou-Harb, E. (2022, April). HoneyComb: A darknet-centric proactive deception technique for curating IoT malware forensic artifacts. In NOMS 2022-2022 IEEE/IFIP Network Operations and Management Symposium (pp. 1-9). IEEE. https://doi.org/10.1109/NOMS54207.2022.9789827
SID267	IEEE	2022	Basso, A., Bortoluzzi, D., & Torta, G. (2022, September). Implementation of an iot wearable prototype on a standard ai architecture. In 2022 IEEE Intl Conf on Dependable, Autonomic and Secure Computing, Intl Conf on Pervasive Intelligence and Computing, Intl Conf on Cloud and Big Data Computing, Intl Conf on Cyber Science and Technology Congress (DASC/PiCom/CBDCom/CyberSciTech) (pp. 1-5). IEEE. https://doi.org/10.1109/DASC/PiCom/CBDCom/Cy55231.2022.9927767
SID268	IEEE	2022	Li, M., Hollifield, S. C., & Iannacone, M. D. (2023, October). Incremental threshold scheme enabled iot group key management. In 2023 7th Cyber Security in Networking Conference (CSNet) (pp. 123-129). IEEE. https://doi.org/10.1109/CSNet59123.2023.10339701
SID269	Springer	2022	Burzagli, L., Emiliani, P. L., Antona, M., & Stephanidis, C. (2022). Intelligent environments for all: a path towards technology-enhanced human well-being. Universal access in the information society, 1-20. https://doi.org/10.1007/s10209-021-00797-0
SID270	IEEE	2022	Anindya, D. S., Yuliana, M., & Hadi, M. Z. S. (2022, August). IoT Based Climate Prediction System Using Long Short-Term Memory (LSTM) Algorithm as Part of Smart Farming 4.0. In 2022 International Electronics Symposium (IES) (pp. 255-260). IEEE. https://doi.org/10.1109/IES55876.2022.9888486
SID271	IEEE	2022	Mohapatra, H., & Dalai, A. K. (2022, February). IoT based V2I framework for accident prevention. In 2022 2nd international conference on artificial intelligence and signal processing (AISP) (pp. 1-4). IEEE. https://doi.org/10.1109/AISP53593.2022.9760623
SID272	IEEE	2022	Ribeiro, F., Metrôlho, J., & Cabral, S. (2022, June). IoT technologies to promote tourism experiences in low-density territories. In 2022 17th Iberian conference on information systems and technologies (CISTI) (pp. 1-7). IEEE. https://doi.org/10.23919/CISTI54924.2022.9820237
SID273	IEEE	2022	Kirikkayis, Y., Gallik, F., & Reichert, M. (2022, May). IoTDM4BPMN: an IoT-enhanced decision making framework for BPMN 2.0. In 2022 International Conference on Service Science (ICSS) (pp. 88-95). IEEE. https://doi.org/10.1109/ICSS55994.2022.00022
SID274	Scopus	2022	Patel, C., & Doshi, N. (2022). LDA-IoT: a level dependent authentication for IoT paradigm. Information Security Journal: A Global Perspective, 31(6), 629-656. https://doi.org/10.1080/19393555.2021.1931573
SID275	IEEE	2022	Mueller, S., Plociennik, M., Zacharczuk, M., Fojud, A., Blaszczak, M., Laskowska, A., ... & Wojtowicz, A. (2022, August). Leveraging IoT solutions as a base for development of the agriculture advisory services. In 2022 IEEE International Conference on Omni-layer Intelligent Systems (COINS) (pp. 1-6). IEEE. https://doi.org/10.1109/COINS54846.2022.9854950
SID276	Scopus	2022	Ali, J., Zafar, M. H., Hewage, C., Hassan, R., & Asif, R. (2022). Mathematical modeling and validation of retransmission-based mutant MQTT for improving quality of service in developing smart cities. Sensors, 22(24), 9751. https://doi.org/10.3390/s22249751
SID277	IEEE	2022	Neves, J., Postolache, O., Monge, J., & Pereira, J. M. D. (2022, November). Mixed Reality and IoT for Physical Rehabilitation. In 2022 E-Health and Bioengineering Conference (EHB) (pp. 01-06). IEEE. https://doi.org/10.1109/EHB55594.2022.9991681
SID278	Springer	2022	Gómez, A., Iglesias-Urkia, M., Belategi, L., Mendialdua, X., & Cabot, J. (2022). Model-driven development of asynchronous message-driven architectures with AsyncAPI. Software and Systems Modeling, 1-29.

			https://doi.org/10.1007/s10270-021-00945-3
SID279	Scopus	2022	Kang, E. Y., Brix, M., Szenczi, D., Kováts, Á., Formosa, R., Melsen, C. W., & Nørgård, M. A. (2022, November). Model-driven software development approach: Ensuring safety of an iot-based plant health monitoring system. In 2022 6th International Conference on System Reliability and Safety (ICSRS) (pp. 251-258). IEEE. https://doi.org/10.1109/ICSRS56243.2022.10067493
SID280	IEEE	2022	Ghosh, A., Misra, S., & Udutalapally, V. (2022). Multiobjective optimization and sensor correlation framework for IoT data validation. IEEE Sensors Journal, 22(23), 23581-23589. https://doi.org/10.1109/JSEN.2022.3215993
SID281	Springer	2022	Di Ciccio, C., Meroni, G., & Plebani, P. (2022). On the adoption of blockchain for business process monitoring. Software and Systems Modeling, 21(3), 915-937. https://doi.org/10.1007/s10270-021-00959-x
SID282	IEEE	2022	Roy, S., Das, D., Mondal, A., Mahalat, M. H., Sen, B., & Sikdar, B. (2022). PLAKE: PUF-based secure lightweight authentication and key exchange protocol for IoT. IEEE Internet of Things Journal, 10(10), 8547-8559. https://doi.org/10.1109/JIOT.2022.3202265
SID283	IEEE	2022	Vieira, D. F., & Júnior, H. G. (2022, October). Public Transportation passengers accounting at university by IoT device. In 2022 Symposium on Internet of Things (SIoT) (pp. 1-5). IEEE. https://doi.org/10.1109/SIoT56383.2022.10070138
SID284	IEEE	2022	Tan, C., Wang, P., Zhang, J., Bai, S., Zhang, Z., & Sun, H. (2022, April). Research and Application of Low-Voltage Smart Circuit Breaker for Power Distribution Internet of Things. In 2022 5th International Conference on Energy, Electrical and Power Engineering (CEEPE) (pp. 182-186). IEEE. https://doi.org/10.1109/CEEPE55110.2022.9783443
SID285	IEEE	2022	Huang, Z., Wen, X., & Wang, N. (2022, August). Research on Intelligent Monitoring Technology of Substation Equipment Based on Power IoT. In 2022 6th International Conference on Wireless Communications and Applications (ICWCAPP) (pp. 63-66). IEEE. https://doi.org/10.1109/ICWCAPP57292.2022.00023
SID286	Springer	2022	Coppolino, L., Sgaglione, L., D'Antonio, S., Magliulo, M., Romano, L., & Pacelli, R. (2022). Risk assessment driven use of advanced SIEM technology for cyber protection of critical e-health processes. SN Computer Science, 3, 1-13. https://doi.org/10.1007/s42979-021-00858-4
SID287	IEEE	2022	Hasan, T., Malik, J., Bibi, I., Khan, W. U., Al-Wesabi, F. N., Dev, K., & Huang, G. (2022). Securing industrial internet of things against botnet attacks using hybrid deep learning approach. IEEE Transactions on Network Science and Engineering, 10(5), 2952-2963. https://doi.org/10.1109/TNSE.2022.3168533
SID288	Scopus	2022	Zhang, Z., Xia, C., & Chen, S. (2022). Security and privacy with opacity-based state observation for finite state machine. Asian Journal of Control, 24(2), 614-625. https://doi.org/10.1002/asjc.2570
SID289	IEEE	2022	Aguiar, A., & Rodrigues, J. (2022, January). Sensemycity: a mobile iot tool for researching intelligent urban mobility. In 2022 14th International Conference on COMmunication Systems & NETworkS (COMSNETS) (pp. 725-733). IEEE. https://doi.org/10.1109/COMSNETS53615.2022.9668516
SID290	IEEE	2022	[S290] Iqbal, A., & Rana, M. E. (2022, March). Smart health technology model for adoption of IoT in automobiles for driver's safety. In 2022 International Conference on Decision Aid Sciences and Applications (DASA) (pp. 1018-1022). IEEE. https://doi.org/10.1109/DASA54658.2022.9765239
SID291	Springer	2022	Ilyas, A., Alatawi, M. N., Hamid, Y., Mahfooz, S., Zada, I., Gohar, N., & Shah, M. A. (2022). Software architecture for pervasive critical health monitoring system using fog computing. Journal of Cloud Computing, 11(1), 84. https://doi.org/10.1186/s13677-022-00371-w
SID292	IEEE / Scopus / WoS	2022	Ismail, S., & Dawoud, D. W. (2022, January). Software development models for IoT. In 2022 IEEE 12th Annual Computing and Communication Workshop and Conference (CCWC) (pp. 0524-0530). IEEE. https://doi.org/10.1109/CCWC54503.2022.9720750
SID293	Scopus	2022	Hofman, J., Do, T. H., Qin, X., Bonet, E. R., Philips, W., Deligiannis, N., & La Manna, V. P. (2022). Spatiotemporal air quality inference of low-cost sensor data: Evidence from multiple sensor testbeds. Environmental Modelling & Software, 149, 105306. https://doi.org/10.1016/j.envsoft.2022.105306
SID294	IEEE	2022	Andreas, A., Mavromoustakis, C. X., Mastorakis, G., Batalla, J. M., Pallis, E., & Chatzimisios, P. (2022, September). Sustainable framework for smart assistive living improvement through IoT-based integration model. In 2022 IEEE International Mediterranean Conference on Communications and Networking (MeditCom) (pp. 31-36). IEEE. https://doi.org/10.1109/MeditCom55741.2022.9928640
SID295	IEEE	2022	Charilaou, C., Ioannou, C. I., & Vassiliou, V. (2022, June). System for operational technology attack detection in industrial IoT. In 2022 20th Mediterranean Communication and Computer Networking Conference (MedComNet) (pp. 84-93). IEEE. https://doi.org/10.1109/MedComNet55087.2022.9810446
SID296	IEEE	2022	Lee, S., Roh, B. H., & Kim, S. J. (2022, January). The convergence system of an IoT standard service platform and an autonomous drone. In 2022 IEEE International Conference on Consumer Electronics (ICCE) (pp. 1-3). IEEE. https://doi.org/10.1109/ICCE53296.2022.9730389
SID297	Springer	2022	Essel, H. B., Vlachopoulos, D., Tachie-Menson, A., Johnson, E. E., & Baah, P. K. (2022). The impact of a virtual teaching assistant (chatbot) on students' learning in Ghanaian higher education. International Journal of Educational Technology in Higher Education, 19(1), 57. https://doi.org/10.1186/s41239-022-00362-6
SID298	IEEE / Scopus	2022	Sharma, S., Urumkar, S., Fontanesi, G., Karanam, V. S. S. L., Hu, B., Ramamurthy, B., & Nag, A. (2022, July). Towards Emulation of Intelligent IoT Networks on EU-US Testbeds. In 2022 International Seminar on Intelligent Technology and Its Applications (ISITIA) (pp. 484-489). IEEE. https://doi.org/10.1109/ISITIA56226.2022.9855352
SID299	Springer	2022	Garcia-Garcia, J. M., Penichet, V. M., Lozano, M. D., & Fernando, A. (2022). Using emotion recognition technologies to teach children with autism spectrum disorder how to identify and express emotions. Universal Access in the Information Society, 21(4), 809-825. https://doi.org/10.1007/s10209-021-00818-y
SID300	IEEE	2023	Xu, G., Zhou, Z., Dong, J., Zhang, L., & Song, X. (2023). A blockchain-based federated learning scheme for data sharing in industrial Internet of Things. IEEE Internet of Things Journal, 10(24), 21467–21478. https://doi.org/10.1109/JIOT.2023.3298196
SID301	Springer	2023	Sober, M., Scaffino, G., Schulte, S., & Kanhere, S. S. (2023). A blockchain-based IoT data marketplace. Cluster Computing, 26, 3523–3545. https://doi.org/10.1007/s10586-022-03745-6
SID302	Springer	2023	Albshri, A., Alzubaidi, A., Alharby, M., Awaji, B., Mitra, K., & Solaiman, E. (2023). A conceptual architecture for simulating blockchain-based IoT ecosystems. Journal of Cloud Computing: Advances, Systems and Applications, 12, 103. https://doi.org/10.1186/s13677-023-00481-z

SID303	Springer	2023	González-Abad, J., López García, Á., & Kozlov, V. Y. (2023). A container-based workflow for distributed training of deep learning algorithms in HPC clusters. Cluster Computing, 26, 2815–2834. https://doi.org/10.1007/s10586-022-03798-7
SID304	Springer	2023	Ghrab, S., Lahyani, I., Yangui, S., & Jmaiel, M. (2023). A core IoT ontology for automation support in edge computing. Service Oriented Computing and Applications, 17, 25–37. https://doi.org/10.1007/s11761-022-00356-2
SID305	IEEE	2023	Rath, C. K., Mandal, A. K., & Sarkar, A. (2023). A feature-weighted clustering approach for context discovery and selection of devices in IoT. In 2023 4th International Conference on Computing and Communication Systems (I3CS) (pp. 97–102). IEEE. https://doi.org/10.1109/I3CS58314.2023.10127469
SID306	Springer	2023	Aguzzi, G., Audrito, G., Casadei, R., Damiani, F., Torta, G., & Viroli, M. (2023). A field-based computing approach to sensing-driven clustering in robot swarms. Swarm Intelligence, 17, 27–62. https://doi.org/10.1007/s11721-022-00215-y
SID307	Scopus	2023	Kerin, M., Pham, D. T., Huang, J., & Hadall, J. (2023). A generic asset model for implementing product digital twins in smart remanufacturing. The International Journal of Advanced Manufacturing Technology, 124, 3021–3038. https://doi.org/10.1007/s00170-022-09295-w
SID308	Springer	2023	Hu, Q., Qi, H., Huang, W., & Liu, M. (2023). A method to recommend cloud manufacturing service based on the spectral clustering and improved Slope one algorithm. Journal of Cloud Computing, 12(1), 115. https://doi.org/10.1186/s13677-023-00489-5
SID309	Springer	2023	Alfonso, I., Garcés, K., Castro, H., & Cabot, J. (2023). A model-based infrastructure for the specification and runtime execution of self-adaptive IoT architectures. Computing, 105(9), 1883-1906. https://doi.org/10.1007/s00607-022-01145-7
SID310	IEEE / Scopus	2023	AbdelQader, A., Lafi, M., Awad, K., & AbedelQader, M. A. (2023, August). A Novel Approach to Elicit Software Requirements for IoT Systems Using SVM Classifier. In 2023 International Conference on Information Technology (ICIT) (pp. 779-782). IEEE. https://doi.org/10.1109/ICIT58056.2023.10225969
SID311	Scopus	2023	Subha, S., Inbamalar, T. M., Suresh, L. R., Boopathi, S., & Alaskar, K. (2023, February). A Remote Health Care Monitoring system using internet of medical things (IoMT). In 2023 3rd International Conference on Innovative Practices in Technology and Management (ICIPTM) (pp. 1-6). IEEE. https://doi.org/10.1109/ICIPTM57143.2023.10118103
SID312	Springer	2023	Makkonen, J., Latikka, R., Kaukonen, L., Laine, M., & Väänänen, K. (2023). Advancing residents' use of shared spaces in Nordic superblocks with intelligent technologies. AI & society, 38(3), 1167-1184. https://doi.org/10.1007/s00146-022-01604-x
SID313	Springer	2023	Georgievski, I., Shahid, M. Z., & Aiello, M. (2023). AI temporal planning for energy smart buildings. Energy Informatics, 6(Suppl 1), 18. https://doi.org/10.1186/s42162-023-00289-w
SID314	Springer	2023	El-Rashidy, N., Sedik, A., Siam, A. I., & Ali, Z. H. (2023). An efficient edge/cloud medical system for rapid detection of level of consciousness in emergency medicine based on explainable machine learning models. Neural Computing and Applications, 35(14), 10695-10716. https://doi.org/10.1007/s00521-023-08258-w
SID315	IEEE	2023	Laha, S. R., Pattanayak, B. K., Pattnaik, S., Mishra, D., Nayak, D. S. K., & Dash, B. B. (2023, September). An IOT-based soil moisture management system for precision agriculture: real-time monitoring and automated irrigation control. In 2023 4th International Conference on Smart Electronics and Communication (ICOSEC) (pp. 451-455). IEEE. https://doi.org/10.1109/ICOSEC58147.2023.10276266
SID316	Springer	2023	Mahroo, A., Greci, L., Mondellini, M., & Sacco, M. (2023). Assessment of a mixed reality smart home controller: HoloHome pilot study on healthy adults. Virtual Reality, 27(3), 2673-2690. https://doi.org/10.1007/s10055-023-00834-8
SID317	IEEE	2023	Macrì, D., & Gentile, A. F. (2023, October). Avoiding information disorder in disaster recovery through internet of things. In 2023 IEEE/WIC International Conference on Web Intelligence and Intelligent Agent Technology (WI-IAT) (pp. 469-473). IEEE. https://doi.org/10.1109/WI-IAT59888.2023.00077
SID318	Scopus	2023	Lee, J., Kim, M., Park, K., Noh, S., Bisht, A., Das, A. K., & Park, Y. (2023). Blockchain-based data access control and key agreement system in iot environment. Sensors, 23(11), 5173. https://doi.org/10.3390/s23115173
SID319	IEEE / Scopus	2023	Maurya, V., Rishiwal, V., Yadav, M., Jat, D. S., Agarwal, U., & Verma, V. R. (2023, August). Blockchain-powered solution to safeguard iot devices against attacks. In 2023 International conference on emerging trends in networks and computer communications (ETNCC) (pp. 209-215). IEEE. https://doi.org/10.1109/ETNCC59188.2023.10284784
SID320	Springer	2023	Lipps, C., Herbst, J., Klingel, S., Franke, L., Wolff, A., Rüb, M., ... & Schotten, H. D. (2023). Connectivity in the era of the (I) IoT: about security, features and limiting factors of reconfigurable intelligent surfaces. Discover Internet of Things, 3(1), 16. https://doi.org/10.1007/s43926-023-00046-1
SID321	IEEE	2023	Yadav, T., Kulkarni, P., & Chirputkar, A. (2023, August). Continuous Bank Audit Using Internet of Things. In 2023 5th International Conference on Inventive Research in Computing Applications (ICIRCA) (pp. 1412-1417). IEEE. https://doi.org/10.1109/ICIRCA57980.2023.10220640
SID322	Springer	2023	Roy, M., Das, S., Deb, N., Cortesi, A., Chaki, R., & Chaki, N. (2023). Correlating contexts and NFR conflicts from event logs. Software and Systems Modeling, 22(6), 1987-2010. https://doi.org/10.1007/s10270-023-01087-4
SID323	IEEE	2023	Kaur, A., Sahu, R., & Anand, D. (2023, August). Deep Reinforcement Base Multi Context Routing in Social IoT. In 2023 International Conference on Circuit Power and Computing Technologies (ICCPCT) (pp. 675-682). IEEE. https://doi.org/10.1109/ICCPCT58313.2023.10245117
SID324	Scopus	2023	Alarcón-Maza, K., Herrera-Perez, V., Rodriguez-Flores, J., Pacheco-Cunduri, M., & Hernandez-Ambato, J. (2023, April). Design and experimental validation of an IoT data-logger device for indirect measurement of solar irradiance based on a correlation model. In 2023 IEEE Green Technologies Conference (GreenTech) (pp. 40-45). IEEE. https://doi.org/10.1109/GreenTech56823.2023.10173825
SID325	Scopus	2023	Moran, J. P. O., Cortez, J. D. L. C., De La Cruz, S. E. C., Mendoza, P. A. M., & Quijano, S. A. C. (2023, October). Design of a Prevention and Monitoring System for People with Hypertension. In 2023 IEEE 14th Annual Ubiquitous Computing, Electronics & Mobile Communication Conference (UEMCON) (pp. 0783-0787). IEEE. https://doi.org/10.1109/UEMCON59035.2023.10316051
SID326	Springer	2023	[S326] Albrecht, R., Overbeek, S., & van de Weerd, I. (2023). Designing a Data Quality Management Framework for CRM Platform Delivery and Consultancy. SN Computer Science, 4(6), 742. https://doi.org/10.1007/s42979-023-02196-z
SID327	IEEE	2023	Vijayarangan, R., Loganathan, S., Thirumurugan, V., Poonguzhali, I., & Ramachandra, A. C. (2023, June). Detection of Denial of Service Attacks Using SNMP-MIB in Internet of Things Environment. In 2023 International Conference on Applied Intelligence and Sustainable Computing (ICAISC) (pp. 1-5). IEEE. https://doi.org/10.1109/ICAISC58445.2023.10199348

SID328	IEEE	2023	Sánchez, I. C. G., Bacovich, R. A., López, J. G., Cuevas, C. Á., Cocozza, C., & Álvarez-Taboada, F. (2023, November). Development and Application of an Automated System for Early Detection of Stress and Damage in Poplar Clone Plantations Using Eco-Physiological Sensors and IoT. In 2023 IEEE International Workshop on Metrology for Agriculture and Forestry (MetroAgriFor) (pp. 624-628). IEEE. https://doi.org/10.1109/MetroAgriFor58484.2023.10424391
SID329	Springer	2023	Huang, H. C., Tsai, C. H., & Lin, H. C. (2023). Development of 5G cyber-physical production system. International Journal of Networked and Distributed Computing, 11(1), 9-19. https://doi.org/10.1007/s44227-022-00003-4
SID330	Scopus	2023	Mendonça, R. D. S., De Carvalho, M. M., Machado, G. S., Da Silva, C. S. M., De Medeiros, R. L. P., & De Lucena, V. F. (2023). Development of a novel methodology to retrofit legacy systems in the context of industry 4.0. IEEE Access, 11, 123223-123235. https://doi.org/10.1109/ACCESS.2023.3328537
SID331	IEEE	2023	Olatinwo, D. D., Abu-Mahfouz, A. M., Hancke, G. P., & Myburgh, H. C. (2023). Energy efficient priority-based hybrid MAC protocol for IoT-enabled WBAN systems. IEEE Sensors Journal, 23(12), 13524-13538. https://doi.org/10.1109/JSEN.2023.3273427
SID332	IEEE	2023	Girón, S. A. S., Morales, B. A. C., Lagos, F. D. L. C., & Rodríguez, F. E. N. (2023, April). Environmental monitoring system with wireless sensing and iot technologies for intensive care units. In 2023 8th International Conference on Control and Robotics Engineering (ICCRE) (pp. 150-155). IEEE. https://doi.org/10.1109/ICCRE57112.2023.10155571
SID333	IEEE	2023	Mao, J., Xu, X., Lin, Q., Ma, L., & Liu, J. (2023). EScope: Effective event validation for IoT systems based on state correlation. Big Data Mining and Analytics, 6(2), 218-233. https://doi.org/10.26599/BDMA.2022.9020034
SID334	Scopus	2023	Dehshiri, S. J. H., & Amiri, M. (2023). Evaluating the risks of the internet of things in renewable energy systems using a hybrid fuzzy decision approach. Energy, 285, 129493. https://doi.org/10.1016/j.energy.2023.129493
SID335	Scopus	2023	Ahmad, F., Chaudhry, M. T., Jamal, M. H., Sohail, M. A., Gavilanes, D., Vergara, M. M., & Ashraf, I. (2023). Formal modeling and analysis of security schemes of RPL protocol using colored Petri nets. Plos one, 18(8), e0285700. https://doi.org/10.1371/journal.pone.0285700
SID336	IEEE	2023	Ferrag, M. A., Hamouda, D., Debbah, M., Maglaras, L., & Lakas, A. (2023, June). Generative adversarial networks-driven cyber threat intelligence detection framework for securing internet of things. In 2023 19th International Conference on Distributed Computing in Smart Systems and the Internet of Things (DCOSS-IoT) (pp. 196-200). IEEE. https://doi.org/10.1109/DCOSS-IoT58021.2023.00042
SID337	IEEE	2023	Rudraraju, S. R., Suryadevara, N. K., & Negi, A. (2023). Heterogeneous Sensor Data Acquisition and Federated Learning for Resource Constrained IoT Devices—A Validation. IEEE Sensors Journal, 23(15), 17602-17610. https://doi.org/10.1109/JSEN.2023.3287580
SID338	Springer	2023	Nizamudeen, S. M. T. (2023). Intelligent intrusion detection framework for multi-clouds–IoT environment using swarm-based deep learning classifier. Journal of Cloud Computing, 12(1), 134. https://doi.org/10.1186/s13677-023-00509-4
SID339	Springer	2023	Ntambara, B., Nyambo, D. G., & Solsbach, A. (2023). Internet of things (IoT)-based on real-time and remote boiler fuel monitoring system: a case of Raha Beverages Company Limited, Arusha-Tanzania. Discover Internet of Things, 3(1), 19. https://doi.org/10.1007/s43926-023-00052-3
SID340	IEEE	2023	Slunjski, M., & Sumina, D. (2023, July). Investigation of Internet-of-Things gateway-based solution for protection of industrial control systems. In 2023 3rd International Conference on Electrical, Computer, Communications and Mechatronics Engineering (ICECCME) (pp. 1-6). IEEE. https://doi.org/10.1109/ICECCME57830.2023.10253072
SID341	IEEE / Scopus	2023	Laxmaiah, B., Easwaran, B., Sultana, H. P., Praveenadevi, D., & Katragadda, L. S. (2023, May). Iot Enabled Fog Based Computing with Deep Learning Models to Increase The Allocation of Resource. In 2023 International Conference on Disruptive Technologies (ICDT) (pp. 140-143). IEEE. https://doi.org/10.1109/ICDT57929.2023.10151115
SID342	IEEE	2023	Sun, S., Peng, T., Huang, H., Wang, Y., Zhang, X., & Zhou, Y. (2023). IoT motion tracking system for workout performance evaluation: A case study on dumbbell. IEEE Transactions on Consumer Electronics, 69(4), 798-808. https://doi.org/10.1109/TCE.2023.3320183
SID343	IEEE	2023	Almorabea, O. M., Khanzada, T. J. S., Aslam, M. A., Hendi, F. A., & Almorabea, A. M. (2023). IoT Network-Based Intrusion Detection Framework: A Solution to Process Ping Floods Originating From Embedded Devices. IEEE access, 11, 119118-119145. https://doi.org/10.1109/ACCESS.2023.3327061
SID344	IEEE	2023	Kumar, G. R., Ranjani, M., Santhiya, R., & Thamilselvi, S. S. (2023, August). IoT with Cloud Based Breast Cancer Diagnosis Using Deep Learning Techniques. In 2023 5th International Conference on Inventive Research in Computing Applications (ICIRCA) (pp. 938-946). IEEE. https://doi.org/10.1109/ICIRCA57980.2023.10220631
SID345	IEEE	2023	Rukhiran, M., Wong-In, S., & Netinant, P. (2023). IoT-based biometric recognition systems in education for identity verification services: Quality assessment approach. Ieee Access, 11, 22767-22787. https://doi.org/10.1109/ACCESS.2023.3253024
SID346	IEEE	2023	Adhau, J., Adsare, V., Jadhav, D., Kshirsagar, K., & Tamkhade, J. (2023, November). IoT-Based Face Recognition with SNN. In 2023 2nd International Conference on Futuristic Technologies (INCOFT) (pp. 1-6). IEEE. https://doi.org/10.1109/INCOFT60753.2023.10425691
SID347	IEEE	2023	Iqbal, S., Zafar, N. A., & Batool, T. (2023, November). IoT-based Quality Model in which Blockchain Enabled to Analysis and Provide Medicine to COVID-19 Patients by VDM-SL. In 2023 2nd International Conference on Emerging Trends in Electrical, Control, and Telecommunication Engineering (ETECTE) (pp. 1-6). IEEE. https://doi.org/10.1109/ETECTE59617.2023.10396734
SID348	IEEE	2023	Ceenepalli, P., & Chandrasekhar, C. (2023, October). IoT-Enabled Flood Wall: Advancing Real-Time Flash Flood Monitoring and Forecasting. In 2023 International Conference on Self Sustainable Artificial Intelligence Systems (ICSSAS) (pp. 1369-1376). IEEE. https://doi.org/10.1109/ICSSAS57918.2023.10331865
SID349	Scopus	2023	Oliveira, J., Sousa, F., & Almeida, L. (2023, October). IoTNetEMU-A Framework to Emulate and Test IoT Applications. In Proceedings of the 19th ACM International Symposium on QoS and Security for Wireless and Mobile Networks (pp. 33-37). https://doi.org/10.1145/3616391.3622774
SID350	Scopus	2023	Akram, U., Sharif, W., Shahroz, M., Mushtaq, M. F., Aray, D. G., Thompson, E. B., ... & Ashraf, I. (2023). IoTTPS: Ensemble RKSVM model-based Internet of Things threat protection system. Sensors, 23(14), 6379. https://doi.org/10.3390/s23146379
SID351	IEEE	2023	Malik, M., Dutta, M., & Granjal, J. (2023). L-ecqv: Lightweight ecqv implicit certificates for authentication in the internet of things. IEEE Access, 11, 35517-35540. https://doi.org/10.1109/ACCESS.2023.3261666

SID352	IEEE	2023	Khaing, M. S., Aye, Z. M., & Tun, T. (2023, February). Machine Learning-Based Performance Analysis for IoT Attacks in IDS. In 2023 IEEE Conference on Computer Applications (ICCA) (pp. 375-380). IEEE. https://doi.org/10.1109/ICCA51723.2023.10181629
SID353	Springer	2023	Wang, C., & Wang, D. (2023). Managing the integration of teaching resources for college physical education using intelligent edge-cloud computing. Journal of Cloud Computing, 12(1), 82. https://doi.org/10.1186/s13677-023-00455-1
SID354	IEEE	2023	De Oliveira, R. R., Soares, M. F., De Souza, A. S., & Gomes, K. D. C. (2023). Methodology to control iot smart devices driven by digital tv video scene. IEEE Access, 11, 27806-27815. https://doi.org/10.1109/ACCESS.2023.3257856
SID355	Scopus	2023	Sankaranarayanan, S., Swaminathan, G., Radhakrishnan, T. K., & Sivakumaran, N. (2023). Missing data estimation and IoT-based flyby monitoring of a water distribution system: Conceptual and experimental validation. International Journal of Communication Systems, 36(12), e4135. https://doi.org/10.1002/dac.4135
SID356	IEEE	2023	Nwadiugwu, W. P., Ejaz, W., Kaneko, M., & Anpalagan, A. (2023). Neural-network-assisted packet accelerators for Internet of Things network systems. IEEE Internet of Things Journal, 10(17), 15238-15251. https://doi.org/10.1109/JIOT.2023.3265344
SID357	IEEE	2023	Lee, S., & Kim, J. H. (2023). Opportunistic block validation for iot blockchain networks. IEEE Internet of Things Journal, 11(1), 666-676. https://doi.org/10.1109/JIOT.2023.3287166
SID358	Scopus	2023	Padmavilochanan, D., Pathinarupothi, R. K., Menon, K. U., Kumar, H., Guntha, R., Ramesh, M. V., & Rangan, P. V. (2023). Personalized diabetes monitoring platform leveraging IoMT and AI for non-invasive estimation. Smart Health, 30, 100428. https://doi.org/10.1016/j.smhl.2023.100428
SID359	IEEE	2023	Balaji, S., Raju, N. K. K., Tarun, S., Karthikeyan, R., Shankar, T., & Santhakumar, R. (2023, May). Precision Agriculture Crop Recommendation System Using IoT and Machine Learning. In 2023 2nd International Conference on Vision Towards Emerging Trends in Communication and Networking Technologies (ViTECoN) (pp. 1-6). IEEE. https://doi.org/10.1109/ViTECoN58111.2023.10157577
SID360	Springer	2023	Haghshenas, A., Hasan, A., Osen, O., & Mikalsen, E. T. (2023). Predictive digital twin for offshore wind farms. Energy Informatics, 6(1), 1. https://doi.org/10.1186/s42162-023-00257-4
SID361	IEEE	2023	Regi, R. J., Joseph, J., & Thomas, P. (2023, November). Predictive Modeling of Residential Energy Usage with Deep Learning and IoT Devices. In 2023 IEEE International Conference on Recent Advances in Systems Science and Engineering (RASSE) (pp. 1-6). IEEE. https://doi.org/10.1109/RASSE60029.2023.10363582
SID362	IEEE	2023	Zhang, S., & Zhu, J. (2023, June). Privacy protection federated learning framework based on blockchain and committee consensus in IoT devices. In 2023 IEEE 47th Annual Computers, Software, and Applications Conference (COMPSAC) (pp. 627-636). IEEE. https://doi.org/10.1109/COMPSAC57700.2023.00088
SID363	IEEE	2023	Chakraborty, A., Gupta, R. D., Roy, D., Kabir, M. Z., Bablu, M. S. I., & Gupta, R. D. (2023, December). Radiation Monitoring and Environmental Assessment in Precision Agriculture: Development of an Integrated IoT Device with Comprehensive Data Analysis Capabilities. In 2023 26th International Conference on Computer and Information Technology (ICCIT) (pp. 1-6). IEEE. https://doi.org/10.1109/ICCIT60459.2023.10441341
SID364	IEEE	2023	Chanal, P. M., & Kakkasageri, M. S. (2023, July). Random forest algorithm based device authentication in IoT. In 2023 IEEE International Conference on Electronics, Computing and Communication Technologies (CONECCT) (pp. 1-6). IEEE. https://doi.org/10.1109/CONECCT57959.2023.10234738
SID365	Springer	2023	Muñiz, R., Nuño, F., Díaz, J., González, M., J. Prieto, M., & Menéndez, Ó. (2023). Real-time monitoring solution with vibration analysis for industry 4.0 ventilation systems. The Journal of Supercomputing, 79(6), 6203-6227. https://doi.org/10.1007/s11227-022-04897-3
SID366	IEEE	2023	Zhang, K., Zheng, J., Fu, J., Zhang, Y., & Ji, W. (2023, September). Research and application of zero trust based secure access to the power Internet of Things. In 2023 IEEE 7th Information Technology and Mechatronics Engineering Conference (ITOEC) (Vol. 7, pp. 2356-2360). IEEE. https://doi.org/10.1109/ITOEC57671.2023.10291965
SID367	IEEE	2023	Liao, X. (2023, November). Research on Network Security Dynamic Defense Technology for Power Iot Terminals. In 2023 5th International Conference on Artificial Intelligence and Computer Applications (ICAICA) (pp. 876-880). IEEE. https://doi.org/10.1109/ICAICA58456.2023.10405519
SID368	IEEE	2023	Salas, H., Ramirez, O., & Wong, L. (2023, November). SafeSteps: A mobile app for monitoring and tracking the elderly with Alzheimer's using an IoT device. In 2023 IEEE XXX International Conference on Electronics, Electrical Engineering and Computing (INTERCON) (pp. 1-7). IEEE. https://doi.org/10.1109/INTERCON59652.2023.10326076
SID369	Scopus	2023	Lu, C. H., Liu, C. H., & Chen, Z. H. (2023). Secure and efficient firmware update for increasing IoT-enabled smart devices. Journal of Ambient Intelligence and Humanized Computing, 14(5), 4987-5000. https://doi.org/10.1007/s12652-020-02492-z
SID370	IEEE	2023	Biró, V., Chiu, W. Y., & Meng, W. (2023, December). Securing iot firmware dispatch systems with blockchain. In 2023 IEEE International Conference on Blockchain (Blockchain) (pp. 229-238). IEEE. https://doi.org/10.1109/Blockchain60715.2023.00046
SID371	IEEE	2023	Srivastava, A., & Jain, U. (2023, July). Securing the future of IoT: A comprehensive framework for real-time attack detection and mitigation in IoT networks. In 2023 14th International Conference on Computing Communication and Networking Technologies (ICCCNT) (pp. 1-6). IEEE. https://doi.org/10.1109/ICCCNT56998.2023.10307306
SID372	Springer	2023	Li, J., & Zhu, S. (2023). Service composition considering energy consumption of users and transferring files in a multicloud environment. Journal of Cloud Computing, 12(1), 43. https://doi.org/10.1186/s13677-023-00423-9
SID373	Springer	2023	Cañizares, P. C., Núñez, A., Bernal, A., Cambronero, M. E., & Barker, A. (2023). Simcan2Cloud: a discrete-event-based simulator for modelling and simulating cloud computing infrastructures. Journal of Cloud Computing, 12(1), 133. https://doi.org/10.1186/s13677-023-00511-w
SID374	Springer	2023	Li, H., Chen, J., Yang, C., Chen, X., Chang, L., & Liu, J. (2023). Smart and efficient EV charging navigation scheme in vehicular edge computing networks. Journal of Cloud Computing, 12(1), 176. https://doi.org/10.1186/s13677-023-00547-y
SID375	IEEE	2023	Mendes, L. F., Aguilar, P. A., & Bezerra, C. I. (2023, March). Software Architecture for IoT-based Indoor Positioning Systems for Ambient Assisted Living. In 2023 IEEE 20th International Conference on Software Architecture (ICSA) (pp. 93-104). IEEE. https://doi.org/10.1109/ICSA56044.2023.00017
SID376	Springer	2023	Talaat, F. M., & El-Balka, R. M. (2023). Stress monitoring using wearable sensors: IoT techniques in medical field. Neural Computing and Applications, 35(25), 18571-18584. https://doi.org/10.1007/s00521-023-08681-z

SID377	Springer	2023	Babović, Z., Bajat, B., Barac, D., Bengin, V., Đokić, V., Đorđević, F., ... & Zak, S. (2023). Teaching computing for complex problems in civil engineering and geosciences using big data and machine learning: synergizing four different computing paradigms and four different management domains. Journal of Big Data, 10(1), 89. https://doi.org/10.1186/s40537-023-00730-7
SID378	IEEE	2023	Williams, K., Hammer, J., & Hudson, S. (2023, October). The IoT Codex: A Book of Programmable Stickers for Authoring and Composing Embedded Computing Applications. In 2023 IEEE Symposium on Visual Languages and Human-Centric Computing (VL/HCC) (pp. 1-11). IEEE. https://doi.org/10.1109/VL-HCC57772.2023.00009
SID379	Springer	2023	Garcia, A., Oregui, X., Franco, J., Arrieta, U., Ferreres, J., & Valencia, J. A. (2023). Time series manufacturing data edge monitoring and visualization to support industrial maintenance teams. SN Computer Science, 5(1), 131. https://doi.org/10.1007/s42979-023-02442-4
SID380	Springer	2023	De Donato, L., Dirnfeld, R., Somma, A., De Benedictis, A., Flammini, F., Marrone, S., ... & Vittorini, V. (2023). Towards AI-assisted digital twins for smart railways: preliminary guideline and reference architecture. Journal of Reliable Intelligent Environments, 9(3), 303-317. https://doi.org/10.1007/s40860-023-00208-6
SID381	Springer	2023	Mena, M., Criado, J., Iribarne, L., Corral, A., Chbeir, R., & Manolopoulos, Y. (2023). Towards high-availability cyber-physical systems using a microservice architecture. Computing, 105(8), 1745-1768. https://doi.org/10.1007/s00607-023-01165-x
SID382	Scopus	2023	Mishra, S. K., & Sarkar, A. (2023, March). Validating User-Centric Business Process based Service Composition. In 2023 4th International Conference on Computing and Communication Systems (I3CS) (pp. 1-6). IEEE. https://doi.org/10.1109/I3CS58314.2023.10127225
SID383	IEEE	2023	Johar, A., & Lahari, S. A. (2023, December). Water Quality Index Prediction System Using IoT Enabled Sensor Suite and Machine Learning. In 2023 16th International Conference on Sensing Technology (ICST) (pp. 1-6). IEEE. https://doi.org/10.1109/ICST59744.2023.10460817
SID384	Springer	2024	Aldalur, I., Arrieta, A., Agirre, A., Sagardui, G., & Arratibel, M. (2024). A microservice-based framework for multi-level testing of cyber-physical systems. Software Quality Journal, 32(1), 193-223. https://doi.org/10.1007/s11219-023-09639-z
SID385	Springer	2024	Michael, J., & Shekhovtsov, V. A. (2024). A model-based reference architecture for complex assistive systems and its application. Software and Systems Modeling, 23(5), 1247-1274. https://doi.org/10.1007/s10270-024-01157-1
SID386	Springer	2024	Sales Mendes, A. F., Sánchez San Blas, H., Pérez Robledo, F., De Paz Santana, J. F., & Villarrubia González, G. (2024). A novel multiagent system for cervical motor control evaluation and individualized therapy: integrating gamification and portable solutions. Multimedia Systems, 30(3), 131. https://doi.org/10.1007/s00530-024-01328-6
SID387	Springer	2024	Karakostas, I., Valakou, A., Gavgiotaki, D., Stefanidi, Z., Pastaltzidis, I., Tsipouridis, G., ... & Tzovaras, D. (2024). A real-time wearable AR system for egocentric vision on the edge. Virtual Reality, 28(1), 44. https://doi.org/10.1007/s10055-023-00937-2
SID388	Springer	2024	Forkan, A. R. M., Kang, Y. B., Marti, F., Banerjee, A., McCarthy, C., Ghaderi, H., ... & Jayaraman, P. P. (2024). AIoT-citysense: AI and IoT-driven city-scale sensing for roadside infrastructure maintenance. Data Science and Engineering, 9(1), 26-40. https://doi.org/10.1007/s41019-023-00236-5
SID389	Springer	2024	Sheeba, A., Bushra, S. N., Rajarajeswari, S., & Subasini, C. A. (2024). An efficient starling murmuration-based secure web service model for smart city application using DBN. Artificial Intelligence Review, 57(3), 72. https://doi.org/10.1007/s10462-023-10689-9
SID390	Springer	2024	Rostami, M., & Goli-Bidgoli, S. (2024). An overview of QoS-aware load balancing techniques in SDN-based IoT networks. Journal of cloud computing, 13(1), 89. https://doi.org/10.1186/s13677-024-00651-7
SID391	Springer	2024	Upadrista, V., Nazir, S., & Tianfield, H. (2024). Automatic edge app placement for personalized heart attack predictions. Iran Journal of Computer Science, 7(2), 241-257. https://doi.org/10.1007/s42044-024-00172-1
SID392	IEEE	2024	Alshaeri, A., & Younis, M. (2024, January). Distributed Hardware-Assisted Authentication and Key Agreement Protocol for Internet of Things. In 2024 IEEE 21st Consumer Communications & Networking Conference (CCNC) (pp. 152-158). IEEE. https://doi.org/10.1109/CCNC51664.2024.10454706
SID393	Springer	2024	Fedeli, A., Fornari, F., Polini, A., Re, B., Torres, V., & Valderas, P. (2024). FloBP: a model-driven approach for developing and executing IoT-enhanced business processes. Software and Systems Modeling, 23(5), 1217-1246. https://doi.org/10.1007/s10270-024-01150-8
SID394	Springer	2024	Gilani, S. M. M., Usman, M., Daud, S., Kabir, A., Nawaz, Q., & Judit, O. (2024). SDN-based multi-level framework for smart home services. Multimedia Tools and Applications, 83(1), 327-347. https://doi.org/10.1007/s11042-023-15678-2
SID395	IEEE	2024	Sadhwani, S., Modi, U. K., Muthalagu, R., & Pawar, P. M. (2024). SmartSentry: Cyber threat intelligence in industrial IoT. IEEE Access. https://doi.org/10.1109/ACCESS.2024.3371996
SID396	Springer	2024	Maamar, Z., Faci, N., Al-Khafajiy, M., & Dohan, M. (2024). Thing Artifact-based Design of IoT Ecosystems. Service Oriented Computing and Applications, 18(1), 15-31. https://doi.org/10.1007/s11761-023-00379-3
SID397	Springer	2024	Shen, T., Zhang, L., Geng, R., Li, S., & Sun, B. (2024). Traffic prediction for diverse edge IoT data using graph network. Journal of Cloud Computing, 13(1), 84. https://doi.org/10.1186/s13677-023-00543-2
SID398	Springer	2024	Humayun, M., Alsirhani, A., Alserhani, F., Shaheen, M., & Alwakid, G. (2024). Transformative synergy: SSEHCET—bridging mobile edge computing and AI for enhanced eHealth security and efficiency. Journal of Cloud Computing, 13(1), 37. https://doi.org/10.1186/s13677-024-00602-2
SID399	Scopus / WoS	2024	Drăgulinescu, A. M., Zamfirescu, C., Halunga, S., Marcu, I., Li, F. Y., & Dobre, O. A. (2024). Understanding LoRaWAN transmissions in harsh environments: A measurement-based campaign through unmanned aerial/surface vehicles. IEEE Transactions on Instrumentation and Measurement, 73, 1-14. https://doi.org/10.1109/TIM.2024.3351262
SID400	Springer	2024	Vranić, V., Lang, J., Nores, M. L., Arias, J. J. P., Solano, J., & Laseca, G. (2024). Use case modeling in a research setting of developing an innovative pilgrimage support system. Universal Access in the Information Society, 23(4), 1543-1560. https://doi.org/10.1007/s10209-023-01047-1
SID401	IEEE	2019a	Wang, Q., Jia, Z., Wang, T., Shen, Z., Zhao, M., Chen, R., & Shao, Z. (2020). A highly parallelized PIM-based accelerator for transaction-based blockchain in IoT environment. IEEE Internet of Things Journal, 7(5), 4072–4083. https://doi.org/10.1109/JIOT.2019.2963245
SID402	IEEE	2019a	Krishna, A., Le Pallec, M., Mateescu, R., Noirie, L., & Salaün, G. (2019a, May). IoT composer: Composition and deployment of IoT applications. In 2019 IEEE/ACM 41st International Conference on Software Engineering: Companion

			Proceedings (ICSE-Companion) (pp. 19-22). IEEE. https://doi.org/10.1109/ICSE-Companion.2019.00028
SID403	IEEE	2019b	Krishna, A., Le Pallec, M., Mateescu, R., Noirie, L., & Salaün, G. (2019b, May). Rigorous design and deployment of IoT applications. In 2019 IEEE/ACM 7th International Conference on Formal Methods in Software Engineering (FormaliSE) (pp. 11-20). IEEE. https://doi.org/10.1109/FormaliSE.2019.00011
SID404	IEEE	2019b	Wang, G., Nixon, M., & Boudreaux, M. (2019b). Toward cloud-assisted industrial IoT platform for large-scale continuous condition monitoring. Proceedings of the IEEE, 107(6), 1193-1205. https://doi.org/10.1109/JPROC.2019.2914021
SID405	Springer	2020a	Fan, P., Liu, J., Yin, W. et al. 2PC*: a distributed transaction concurrency control protocol of multi-microservice based on cloud computing platform. J Cloud Comp 9, 40 (2020). https://doi.org/10.1186/s13677-020-00183-w
SID406	Springer	2020a	Javed, A. R., Sarwar, M. U., Beg, M. O., Asim, M., Baker, T., & Tawfik, H. (2020). A collaborative healthcare framework for shared healthcare plan with ambient intelligence. Human-centric Computing and Information Sciences, 10, 40. https://doi.org/10.1186/s13673-020-00245-7
SID407	Scopus	2020a	Sun, C., Zheng, F., Zhou, G., & Guo, K. (2020a, July). Design and implementation of cloud-based single-channel LoRa IIoT gateway using raspberry pi. In 2020 39th Chinese Control Conference (CCC) (pp. 5259-5263). IEEE. https://doi.org/10.23919/CCC50068.2020.9189480
SID408	IEEE	2020a	Abbas, S., Khan, M. A., Falcon-Morales, L. E., Rehman, A., Saeed, Y., Zareei, M., ... & Mohamed, E. M. (2020a). Modeling, simulation and optimization of power plant energy sustainability for IoT enabled smart cities empowered with deep extreme learning machine. IEEE Access, 8, 39982-39997. https://doi.org/10.1109/ACCESS.2020.2976452
SID409	IEEE / Scopus	2020b	Fan, J., Zhu, H., & Wang, X. (2020b, November). Classification Method of Indoor Environmental Data based on Internet of Things. In 2020 IEEE 9th Data Driven Control and Learning Systems Conference (DDCLS) (pp. 325-330). IEEE. https://doi.org/10.1109/DDCLS49620.2020.9275275
SID410	Springer	2020b	Javed, A., Robert, J., Heljanko, K., & Främling, K. (2020b). IoTEF: A federated edge-cloud architecture for fault-tolerant IoT applications. Journal of Grid Computing, 18(1), 57-80. https://doi.org/10.1007/s10723-019-09498-8
SID411	IEEE/ Scopus	2020b	Abbas, A. M., Zekry, A., Youssef, K. Y., & Mahmoud, I. I. (2020b, December). Simulink based modeling and performance analysis of NB-IoT uplink scheduler. In 2020 8th International Japan-Africa Conference on Electronics, Communications, and Computations (JAC-ECC) (pp. 11-17). IEEE. https://doi.org/10.1109/JAC-ECC51597.2020.9355921
SID412	IEEE / Scopus	2020b	Sun, H., Li, S., Yu, F. R., Qi, Q., Wang, J., & Liao, J. (2020b). Toward communication-efficient federated learning in the Internet of Things with edge computing. IEEE Internet of Things Journal, 7(11), 11053-11067. https://doi.org/10.1109/JIOT.2020.2994596
SID413	IEEE	2021a	Wang, X., Hu, J., Lin, H., Garg, S., Kaddoum, G., Piran, M. J., & Hossain, M. S. (2021a). QoS and privacy-aware routing for 5G-enabled industrial Internet of Things: A federated reinforcement learning approach. IEEE Transactions on Industrial Informatics, 18(6), 4189-4197. https://doi.org/10.1109/TII.2021.3124848
SID414	IEEE	2021b	Wang, X., Garg, S., Lin, H., Hu, J., Kaddoum, G., Piran, M. J., & Hossain, M. S. (2021b). Toward accurate anomaly detection in industrial internet of things using hierarchical federated learning. IEEE Internet of Things Journal, 9(10), 7110-7119. https://doi.org/10.1109/JIOT.2021.3074382
SID415	Springer	2022a	Moin, A., Challenger, M., Badii, A., & Günnemann, S. (2022a). A model-driven approach to machine learning and software modeling for the IoT: Generating full source code for smart Internet of Things (IoT) services and cyber-physical systems (CPS). Software and Systems Modeling, 21(3), 987-1014. https://doi.org/10.1007/s10270-021-00967-x
SID416	ACM	2022a	Wang, M. B., Manesh, D., Hu, R., & Lee, S. W. (2022a, October). iThem: Programming Internet of Things Beyond Trigger-Action Pattern. In Adjunct Proceedings of the 35th Annual ACM Symposium on User Interface Software and Technology (pp. 1-5). https://doi.org/10.1145/3526114.3558776
SID417	IEEE	2022b	Wang, Y., Liu, S., Shao, Z., & Li, Z. (2022b, December). Research and Application of Edge Computing Technology for Power Smart Internet of Things. In 2022 4th International Academic Exchange Conference on Science and Technology Innovation (IAECST) (pp. 41-45). IEEE. https://doi.org/10.1109/IAECST57965.2022.10062161
SID418	IEEE	2022b	Moin, A., Challenger, M., Badii, A., & Günnemann, S. (2022b, June). Supporting AI engineering on the IoT edge through model-driven TinyML. In 2022 IEEE 46th Annual Computers, Software, and Applications Conference (COMPSAC) (pp. 884-893). IEEE. https://doi.org/10.1109/COMPSAC54236.2022.00140
SID419	IEEE / Scopus	2022c	Wang, T., Kara, D., Li, J., Liu, S., Abdelzaher, T., & Jalaian, B. (2022c, November). The methodological pitfall of dataset-driven research on deep learning: An iot example. In MILCOM 2022-2022 IEEE Military Communications Conference (MILCOM) (pp. 1082-1087). IEEE. https://doi.org/10.1109/MILCOM55135.2022.10017612
SID420	Scopus	2023a	Bao, H., Zhao, Y., Zhang, X., Wang, G., Duan, J., Tian, R., ... & Zhang, M. (2023a). A Probabilistic and Distributed Validation Framework Based on Blockchain for Artificial Intelligence of Things. IEEE Internet of Things Journal, 11(1), 17-28. https://doi.org/10.1109/JIOT.2023.3279849
SID421	IEEE	2023a	Wang, T., Zheng, X., Yang, L., & Xiang, R. (2023a, November). An Adaptive Sampling Strategy for Federal Graph Neural Networks in Internet of Things. In 2023 IEEE International Performance, Computing, and Communications Conference (IPCCC) (pp. 249-258). IEEE. https://doi.org/10.1109/IPCCC59175.2023.10253854
SID422	IEEE	2023a	Putra, M. A. P., Hermawan, A. P., Kim, D. S., & Lee, J. M. (2023a). Data prediction-based energy-efficient architecture for industrial iot. IEEE Sensors Journal, 23(14), 15856-15866. https://doi.org/10.1109/JSEN.2023.3280485
SID423	IEEE	2023b	Putra, M. A. P., Hermawan, A. P., Nwakanma, C. I., Kim, D. S., & Lee, J. M. (2023b). FDPR: A novel fog data prediction and recovery using efficient DL in IoT networks. IEEE Internet of Things Journal, 10(19), 16895-16906. https://doi.org/10.1109/JIOT.2023.3271026
SID424	Scopus	2023b	Wang, M., Shen, K., Tai, C., Zhang, Q., Yang, Z., & Guo, C. (2023b). Research on fault diagnosis system for belt conveyor based on internet of things and the LightGBM model. Plos one, 18(3), e0277352. https://doi.org/10.1371/journal.pone.0277352
SID425	IEEE / Scopus / WoS	2023b	Bao, H., Zhang, X., Wang, G., Tian, R., Duan, J., & Zhao, Y. (2023b, May). Smart-PKI: A blockchain-based distributed identity validation scheme for IoT devices. In ICC 2023-IEEE International Conference on Communications (pp. 4749-4754). IEEE. https://doi.org/10.1109/ICC45041.2023.10279752