DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

IBM – LITERATURE SURVEY

PROJECT TITLE

GAS LEAKAGE MONITORING AND ALERTING SYSTEM

(2022-2023)

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S.NO	TITLE OF THE PROJECT	ADVANTAGES	DISADVANTAGES	TECHNOLOGY USED
1.	Sensor-Based Gas Leakage Detector System	a low-cost advanced sensor-based gas leakage detector, alert and control system is proposed and discussed. The system is very efficient, user friendly, portable, small in size and cost effective	adding more software based intelligent functions with this system. This is an automatic gas detection, control and alert system	gas sensing technology
2.	An Empirical Study on System Level Aspects of Internet of Things (IoT)	Millions of devices exchange information using different communication standards, and interoperability between them is a significant issue. This paper provides the current status of the communication standards and application layer protocols used in IoT with the detailed analysis	IoT applications are provided. Then, the current challenges in the IoT system design are analyzed. Later, the present research trends in IoT architectures are articulated and also described the issues that are necessary to be addressed in the future	IOT technology.
3.	Automated and Scalable Online Conformance Testing for IoT Applications.	This technique of automatic conformance testing can lessen the cost and human intercession to decrease the number of missteps .	The current IoT market is fragmented due to the inefficiency in conformance testing, which creates interoperability issues between	IOT technology.

			multiple IoT applications.	
4.	A Survey on the Integration of Blockchain With IoT to Enhance Performance and Eliminate Challenges	The emergence of blockchain opened the door to solve some challenges related to IoT networks. Blockchain characteristics such as security, transparency, reliability, and traceability make it the perfect candidate to improve IoT systems, solve their problems, and support their future expansion.	This research proposes a new architecture based on three layers system consisting of; devices layer, dewblockchain layer, and cloudlet-blockcha in layer. It is the only architecture that utilizes dew computing in the integration process between IoT and blockchain.	Block chain technology.
5.	An Efficient Counter-Based DDoS Attack Detection Framework Leveraging Software Defined IoT (SD-IoT)	The increase in DDoS attacks has made it important to address the consequences which imply in the IoT industry. This research proposes an SD-IoT based framework that provides security services to the IoT network. We developed a C-DAD (Counter-based DDoS Attack Detection) application that is based on counter values of different network parameters, which helps to detect DDoS attack successfully.	We have extensively analyzed the proposed framework's performance for attack detection time and other parameters such as SD-IoT network throughput, CPU and memory utilization, etc.	SD-IOT technology.

6.	REMOS-IoT-A Relay and Mobility Scheme for Improved IoT Communication Performance.	This paper proposes REMOS-IoT - A RElay and MObility Scheme for improved IoT communication performance in support of increased QoS for the data exchange services between mobile IoT devices.	Although REMOS-IoT was deployed on NS-3, significant differences were not found when comparing the schemes, in relation to the simulator used, with results being alike.	IOT technology.
7.	TON_IoT Telemetry Dataset: A New Generation Dataset of IoT and IIoT for Data-Driven Intrusion Detection Systems	This paper addresses this issue and proposes a new data-driven IoT/IIoT dataset with the ground truth that incorporates a label feature indicating normal and attack classes, as well as a type feature indicating the sub-classes of attacks targeting IoT/IIoT applications for multi-classificatio n problems.	The main finding of the evaluation was that RF and CART achieved the highest score in all metrics on both per-device datasets and the combined one. This finding indicated an inherent advantage of both methods in distinguishing normal class and different attack classes.	IOT Telemetry technology.
8.	Routing Optimization For Cloud Services in SDN-based Internet of Things With TCAM Capacity Constraint	With the rapid increase of IoT devices and applications, the backhaul or backbone networks, which transmit IoT traffic to various in-network clouds, will experience a predicted explosion in the	The volume of data required to be sent to nearby clouds through backhaul network will increase explosively in the near future	IOT technology.

		volume of carried traffic.		
9.	Gas Detection and Identification Using Multimodal Artificial Intelligence Based Sensor Fusion	In this work, a multimodal AI-based fusion framework for reliable identification and detection of gases is developed. We considered four classes for data collection using sensors, namely thermal camera for capturing the thermal signature of the gases and array of gas sensors for detection of specific gases.	This is essential in high-risk applications such as leak detection in chemical plants, identification of explosives, etc. The proposed architecture is based on the deep learning frameworks and hence require large number of data samples for appropriate training of the network.	Artificial Intelligence Based Sensor Fusion
9.	Automatic Gas Leakage Detection and Prevention System	a robotic drive which is capable of detecting the gas leakages in pipelines and it will detect the leakage and automatically closes the valve by using Arduino controller	The integration technology may also create new risks. Sensor technologies, for example, will need to be robust enough to prevent false alarms, and ensure that vital information such as the location of occupants not lost due to data overload during a fire.	Integration technology
10.	LPG Gas Leakage Detection and Alert System	Liquid petroleum gas (LPG) is highly inflammable and can burn even at some distance from the source	When heavy dust, steam or fog blocks the laser beam, the system will not	Wireless and GSM technology

		of leakage. Most fire accidents are caused because of a poor-quality rubber tube or the regulator is not turned off when not in use. Therefore, developing the gas leakage alert system is very essential.	be able to take measurements.	