Sr.no.	Paper Tittle	Year	Publication	Abstract	Future Scope	Dataset
1.	Integration of AI and IoT for Smart Home Automation	2024	Mageshkumar Naarayanasamy Varadarajan1 , Viji C2 , Rajkumar N3 , Mohanraj A	The incorporation of Artificial Intelligence (AI) and Internet of Things (IoT) technologies has extensively advanced the concept of smart home automation. This integration enables the advent of intelligent structures that could enable the security, convenience, and protection of modern-day living spaces. AI algorithms, along with gadget studying and getting to know deep, can analyze information accumulated through IoT gadgets to make knowledgeable choices and automate numerous tasks in the home environments.	Integrating AI and IoT in smart houses holds the significant capability to revolutionize daily residing, imparting automation, comfort, strength efficiency, and greater protection. However, this integration additionally offers traumatic challenges that must be addressed to make sure it is a successful adoption and implementation. Privacy troubles, interoperability issues, and cyber security dangers are some of the number one worries associated with integrating AI and IoT in smart homes.	Real time
2.	Intelligent home automated system	2019	Faridah Yahya, Computer Engineering, UniKL Malaysian Institute of Information Technology	Home automation system is one of the intelligent systems meant to create new opportunities for industry and business, as well as new experiences for users and consumers. This project is about designing, developing and testing a web-based intelligent home automation system called i-Home. Real time The main users will be residents in any residential area i.e. gated community, terrace housing area, condominium and others.	To design and develop i-Home system to monitor and control home lighting, fan and air-condition, and monitor CCTV and room temperature . To develop i-Home web-based system working prototype . To conduct testing of the system to ensure that it can monitor and control home lighting, fan and aircondition, CCTV and room temperature	Real time
3.	Home Automation and Energy Management		Nurul Aliah Abdul Manap	Enhancing comfort, convenience, and energy efficiency, home automation and energy management solutions are transforming how homeowners engage	Increased Adoption Improved Interoperability Enhanced Data Analytics	

				with their living environments. To optimise energy consumption, save waste, and minimise utility costs, these systems incorporate smart technology including thermostats, lighting controls, appliances, and energy monitoring devices. Through customised scheduling, remote control, and real-time energy usage monitoring, home automation systems provide users with the flexibility to make well-informed decisions that improve sustainability and energy efficiency.	Increased Focus on Sustainability Advancements in Energy Storage Solutions	Real time
4.	Green Planning of IoT Home Automation Workflows in Smart Buildings	2022	SOTERIS CONSTANTINOU,ANDREAS KONSTANTINIDIS, PANOS K. CHRYSANTHIS, DEMETRIOS ZEINALIPOUR-YAZTI	The advancement of renewable energy infrastructure in smart buildings has highlighted the importance of energy self-consumption by energy-demanding IoT-enabled devices (e.g., heating/cooling and appliances), which refers to the process of intelligently consuming energy at the time it is available. This stabilizes the energy grid, minimizes energy dissipation on power lines but more importantly is good for the environment as energy from fossil sources with a high CO2 footprint is minimized.	In the future, we plan to investigate in further detail the interesting topic of multiple energy/GPs representing conflicting interests for the benefit of smart communities. We also aim to investigate the so-called IMCF-Cloud extensions that will enable IMCF+ to operate as a CMC controller in the cloud and carry out large field studies. Moreover, the rule adaptation process is a feature that we will consider integrating in our framework in the future.	Real time
5.	Home Energy Management Systems: A Review of the Concept,	2023	BINGHUI HAN,YOUNES ZAHRAOUI,ALEX STOJCEVSKI	Growing electricity demand, the deployment of renewable energy sources and the widespread use of smart home appliances provide new opportunities for home energy management systems (HEMSs), which	Home Energy Management Systems (HEMS) are pivotal in optimizing energy consumption within residential settings. As technology advances and the need for sustainable energy practices becomes more urgent, the scope of	

	Architecture, and Scheduling Strategies			can be defined as systems that improve the overall energy production and consumption of residential buildings by controlling and scheduling the use of household equipment. By saving energy, reducing residential electricity costs, optimizing the utilization rate and reliability of utility companies' power systems, and reducing air pollution for society	HEMS is expanding. Here's a review of the future scope of HEMS, focusing on the concept, architecture, and scheduling strategies.	Real time
6.	Literature Review on Home Automation System	2017	Neha Malik , Yogita Bodwade	One of the topics which is gaining popularity is Home Automation System because of itsinnumerous advantages. Home automation refers to the monitoring and controlling of home appliances remotely. with the neverending growth of the Internet and its applications, there is much potential and scope for remote access and control and monitoring of such network enabled appliances.	The main scope of this research is to design and implement a home automation system using IoT that is capable of controlling and automating most of the house appliances through an easy manageable web interface. The proposed system has a great flexibility by using Wi-Fi technology to interconnect its distributed sensors to home automation server.	Real time
7.	IoT-Enabled Smart Energy Grid: Applications and Challenges	2021	S. M. ABU ADNAN ABIR,JINHO CHOI	The Internet of Things (IoT) is a rapidly emerging field of technologies that delivers numerous cutting-edge solutions in various domains including the critical infrastructures. Thanks to the IoT, the conventional power system network can be transformed into an effective and smarter energy grid. In this article, we review the architecture and functionalities of IoT-enabled smart energy grid systems. Specifically, we focus on different IoT technologies including sensing,	The integration of the Internet of Things (IoT) into smart energy grids holds significant promise for revolutionizing the way energy is generated, distributed, and consumed. IoT-enabled smart grids enhance efficiency, reliability, and sustainability through advanced data analytics, real-time monitoring, and automated control systems. Here is an exploration of the future scope of IoT-enabled smart energy grids,	Real time

				communication, computing technologies, and their standards in relation to smart energy grid.	focusing on their applications and challenges.	
8.	Smart Home Automation	2016	Vaishnavi S. Gunge,Pratibha S. Yalagi	Home automation is becoming popular due to its numerous benefits. Home automation refers to the control of home appliances and domestic features by local networking or by remote control. Artificial Intelligence provides us the framework to go real-time decision and automation for Internet of Things (IoT).	In future home automation will more smart and fast. It would be extended to the largescale environment such as colleges, offices and factories etc	Real time
9.	Home Automation Using AI-IoT	2023	Prof. Mr. Mayank Mangal, Shweta Shrama , Shiva Dubey , Samadhan Koli , Anurag Yadav	Home automation with AI and IoT is an emerging technology that is transforming the way we live in our homes. This paper provides an overview of the key concepts and technologies involved in home automation with AI and IoT, including machine learning, natural language processing, predictive maintenance, cloud computing, and privacy.	• Integration with Wearables: The integration of smart home automation systems with wearables such as smartwatches, fitness trackers, and health monitoring devices can provide a more personalized and seamless experience for users. • Augmented Reality (AR) and Virtual Reality (VR): The use of AR and VR technologies can enhance the user experience of home automation systems by providing immersive and interactive interfaces	Real time
10.	Literature Review on Home Automation System	2017	Lokesh Varshney	One of the topics which are gaining popularity is Home Automation System because of its numerous advantages. Home automation refers to the monitoring and controlling of home appliances remotely. Due to never ending growth of the Internet and its	The integration of AI with IoT, often referred to as AIoT, is set to revolutionize various industries by making systems more intelligent, efficient, and autonomous. This convergence will lead to smarter homes,	Real time

				applications, there is much potential and scope for remote access, control and monitoring of such network enabled appliances.	cities, industries, and more, ultimately enhancing our daily lives and driving economic growth	
11.	Intelligent energy management systems	2023	Stavros Mischos, Eleanna Dalagdi, Dimitrios Vrakas 1	Climate change has become a major problem for humanity in the last two decades. One of the reasons that caused it, is our daily energy waste. People consume electricity in order to use home/work appliances and devices and also reach certain levels of comfort while working or being at home. However, even though the environmental impact of this behavior is not immediately observed, it leads to increased CO2 emissions coming from energy generation from power plants.	Machine and Deep learning techniques are, in most cases, the state-of-the-artapproaches towards the solution of a problem. IEMS are IoT based systems which produce high volume of data, therefore fast and accurate processing is required. Furthermore, these data are, in some cases, collected and processed in real time and decisions must be taken.	Real time
12.	Green Planning of IoT Home Automation Workflows in Smart Buildings	2022	Soteris Constantinou, Andreas Konstantinidis, Panos K. Chrysanthis, and Demetrios Zeinalipour-Yazti	The advancement of renewable energy infrastructure in smart buildings (e.g., photovoltaic) has highlighted the importance of energy self-consumption by energy-demanding IoT-enabled devices (e.g., heating/cooling, electromobility, and appliances), which refers to the process of intelligently consuming energy at the time it is available. This stabilizes the energy grid, minimizes energy dissipation on power lines but more importantly is good for the environment as energy from fossil sources with a high CO2 footprint is minimized.	We plan to investigate in further detail the interesting topic of multiple energy/GPs representing conflicting interests for the benefit of smart communities. We also aim to investigate the so-called IMCF-Cloud extensions that will enable IMCF+ to operate as a CMC controller in the cloud and carry out large field studies. Moreover, the rule adaptation process is a feature that we will consider integrating in our framework in the future.	Real time
13.	MACHINE LEARNING FOR INTELLIGE	2022	Asem Alzoubi	The growth of personal pleasure is a direct result of a person's ability to provide themselves with energy. Since people may construct and enhance	Sb's have a bright future ahead of them. The alarm will wake you up, and the sensors accessible will be aware of	

	NT ENERGY CONSUMPTION IN SMART HOMES			their way of life more swiftly with current innovation, valuable energy has become a sought-after expansion for many years due to the utilization of smart houses and structures. The demand for energy is greater than the supply, resulting in a lack of energy. In order to keep up with the demand for energy, new strategies are being developed.	your waking up as well. In addition to the thermostat warming the space you are going to use, additional sensors such as light sensors switch on the lights in the building automatically. As you wait for your coffee to brew, a weather alert will appear on your phone.	Real time
14.	Internet of Things for Green Building Management	2018	Wayes Tushar, Nipun Wijerathne, Wen-Tai Li, Chau Yuen, H. Vincent Poor, Tapan Kumar Saha, and Kristin L. Wood	Buildings consume 60% of global electricity. However, current building management systems (BMSs) are highly expensive and difficult to justify for small- to medium-sized buildings. The Internet of Things (IoT), which can collect and monitor a large amount of data on different aspects of a building and feed the data to the BMS's processor, provides a new opportunity to integrate intelligence into the BMS for monitoring and managing a building's energy consumption to reduce costs.	The Internet of Things (IoT) is poised to play a significant role in the evolution of green building management, offering solutions that enhance energy efficiency, reduce environmental impact, and improve occupant comfort and health. Here is a comprehensive review of the future scope of IoT in green building management, highlighting its applications and the challenges it faces.	Real time
15.	Design and Implementation of a Real-Time Smart Home Management System Considering Energy Saving	2022	MahmoudH.Elkholy, Tomonobu Senjyu, MohammedElsayed Lotfy, Abdelrahman Elgarhy, Nehad S. Ali and Tamer S. Gaafar	One of the most challenging problems related to the operation of smart microgrids is the optimal home energy management scheme with multiple and conflicting objectives. Moreover, there is a noticeable increase in homes equipped with renewable energy sources (RESs), where the coordination of loads and generation can achieve extra savings and minimize peak loads. In this paper, a solar-powered smart home with optimal energy management	This paper presents an effective method for an optimal energy management system in a smart home using the IoT and optimization techniques. The main purpose of this study is to manage energy in an optimal way with the lowest possible operating cost, while covering the household load demand. In this paper, the design, implementation, and fabrication	Real time

				is designed in an affordable and secure manner, allowing the owner to control the home from remote and local sites using their smartphones and PCs.	of a portable, low-cost, and user-friendly automation system for smart homes based on the IoT are presented.	
16.	Enhancing energy efficiency by reducing carbon footprint in cloud computing	2020	Wani Trupti Sandeep	Global warming and its effect, very badly affects to the world - drastically the weather is changing , snowmelt, level of rising sea, pollution and so on. There are many reasons for increasing the global warming effect. The level of its effect is growing day by day. Global warming is the result of greenhouse gases, CO2 emission and other pollutants. One of the major parameter is CO2 emission, resulting rise in temperature. The temperature increases because of heat weaves, fuelling longer, more frequent droughts, heavier rainfall etc.	There is a lot of scope in cloud computing. It's a layered structure architecture. At each layer itself there is a scope of improvement. Day by day the requirement is increasing and cloud provides many services, so the improvement is possible at each service. Before developing the model, survey was conducted & for that the students from Navi Mumbai were selected. Here again the survey can conduct in different areas.	Real time
17.	Ecological foodprint analysis for a sustainable solid waste management in Kochi city Kerala	2017	Athira Ravi	In the past, natural resources were surplus than the requirements of the people. At present, the situation is rapidly reversing especially in urban areas. Almost all the urban area faces the major challenge of finding a way to balance human consumption/impacts and nature's limited productivity, in order to ensure that the communities are sustainable locally, regionally and globally. The environment management tools should focus on sustainable development practices and shall provide a means for measuring and communicating human induced environmental impacts upon the planet.	Ecological footprint analysis is a critical tool for assessing the environmental impact of human activities and can be instrumental in designing sustainable solid waste management strategies. For a city like Kochi in Kerala, which is grappling with rapid urbanization and increasing waste generation, integrating ecological footprint analysis into solid waste management could provide a pathway to more sustainable and effective waste management practices.	Real time

18.	An IoT-based intelligent smart energy management systems for PV power generation	2024	Challa Krishna Rao, Sarat Kumar Sahoo, Franco Fernando Yanine	Renewable energy is the most dependable and universally acknowledged way of meeting the world's expanding energy needs. In order to optimize solar energy generation, particular focus must be paid to both application and maintenance. IoT-based solar monitoring system proposals have been made in order to collect and analyze solar data, which will allow for performance prediction and reliable power output.	Researchers intending to accomplish automation with minimum human interaction have a difficulty when integrating artificial intelligence into these linked parts. With its hybrid model design, the smart grid becomes an important tool for controlling the supply and demand of different renewable energy sources.	Real time
19.	Home Energy Management Systems: A Review of the Concept, Architecture, and Scheduling Strategies	2022	BINGHUI HAN 1 , YOUNES ZAHRAOUI 2 , MARIZAN MUBIN 1 , SAAD MEKHILEF 3,4, (Fellow, IEEE), MEHDI SEYEDMAHMOUDIAN 3 , (Member, IEEE), AND ALEX STOJCEVSKI 3	Growing electricity demand, the deployment of renewable energy sources and the widespread use of smart home appliances provide new opportunities for home energy management systems (HEMSs), which can be defined as systems that improve the overall energy production and consumption of residential buildings by controlling and scheduling the use of household equipment.	Home Energy Management Systems (HEMS) are becoming increasingly critical in modern homes due to rising energy costs and growing environmental concerns. These systems help optimize energy consumption, reduce costs, and contribute to sustainability. Here's a comprehensive review of the future scope of HEMS, focusing on the concept, architecture, and scheduling strategies.	Real time
20.	Design and Implementation of a Cloud-IoT-Based Home Energy Management System	2021	Lokesh Varshney	This paper details the implementation of a Home Energy Management System (HEMS) using IoT and cloud technologies. It includes scenarios where IoT devices collect and manage energy consumption data, providing insights for reducing carbon footprints	Enhanced AI algorithms for better prediction of energy consumption patterns and optimization of energy use. Systems that learn from user behavior and environmental data to continuously improve efficiency.	Real time