

Review on Impact on Smart Homes Using AI and IoT

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Abstract: *The advent of Artificial Intelligence (AI) and the Internet of Things (IoT) has brought about a transformative shift in residential living through the concept of smart homes. Smart homes utilize a network of interconnected devices and sensors powered by IoT, which collect data and allow for the automation of various household tasks. Coupled with AI, these homes can analyze data, make intelligent decisions, and improve the overall efficiency, comfort, and security of the living environment. AI algorithms can learn user preferences, optimize energy consumption, provide predictive maintenance, and enable personalized services, thus enhancing the convenience and functionality of smart homes. IoT sensors, such as motion detectors, temperature controls, and security cameras, further contribute by providing real-time monitoring and control. This review paper explores the integration of AI and IoT in the development and management of smart homes. It discusses key components of smart home technology, including home automation, energy management, security, and healthcare applications. The paper also delves into the challenges faced, such as privacy concerns, data security, and interoperability between various devices. Additionally, future trends, including the evolution of smart home ecosystems, advancements in AI algorithms, and the role of 5G connectivity in enhancing smart home capabilities, are examined. The convergence of AI and IoT in smart homes represents a promising future in residential living, offering unprecedented levels of comfort, efficiency, and personalization*

Keywords: Smart Homes, Artificial Intelligence, Internet of Things, Automation, Energy Management, Security, Healthcare, Privacy, Data Security

