

REVOLUTIONISING SMART HOMES

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Artificial Intelligence, also known as AI, represents a paramount field within the realm of computer science dedicated to crafting sophisticated software engineered to bestow machines with cognitive capacities akin to those of human beings [1].

This concept traces its origins back to classical antiquity, a period when philosophers endeavored to delineate and conceptualize the intricacies of human cognition. However, it wasn't until the latter part of the 20th century that the nomenclature “artificial intelligence” was officially coined, marking the advent of contemporary AI marvels [1].

The enduring impact of AI in the domain of smart homes is unequivocally incontrovertible. Smart homes stand as an epitome of human ingenuity, reflecting a pinnacle innovation geared towards engendering enhanced convenience and comfort in residential abodes. The infusion of Artificial Intelligence imbues the smart home experience with an unparalleled dimension. Notwithstanding its initial exorbitance and scarcity, technological strides have rendered AI more attainable and cost-effective for an increasingly broad demographic [2].

AI is poised to revolutionize the realm of residential energy conservation. The ubiquity of smart meters and thermostats attests to this progress. These sophisticated contrivances diligently scrutinize household temperature levels and energy consumption patterns, extolled for their efficacy in promoting energy savings and monetary frugality. A prime exemplar is the commercially accessible Google Nest smart thermostat, renowned for optimizing energy efficiency. Future implementations are slated to evince heightened intelligence and sophistication [1].

Artificial Intelligence holds the potential to oversee and deconstruct energy usage, discerning problematic areas like operational inefficiencies. Integrating smart sensors and AI functionalities into household appliances enables continuous performance monitoring, with data seam-

lessly relayed to a central hub facilitated by an interconnected network [1].

Beneficiaries of AI-pioneering smart homes stand to relish freshly prepared culinary delights, courtesy of state-of-the-art robotic kitchens, irrespective of their hectic schedules. These culinary marvels, facile to command, dispense hygienic dishes personalized to the homeowner's palate preferences. A diverse repertoire of recipes reflects the reliability and sophistication underpinning this futuristic gastronomy [2].

AI-integrated windows proffer the allure of thermal equilibrium, adeptly responding to external climatic conditions and air quality thresholds. Leveraging AI technology, these windows deftly mitigate glare, modulate air conditioning systems to attain optimal temperatures, and interface with other smart devices to fortify home monitoring and security measures [2].

The burgeoning prevalence of internet-connected devices underscores the burgeoning ascent of the Internet of Things (IoT) within the smart home milieu.

Current market trends spotlight an array of interconnected appliances such as refrigerators, fire alarms, and door locks, while ongoing developmental endeavors promise even greater integration.

Harnessing the potential of AI within these devices heralds a future where homes resonate as hyper-connected enclaves, imperceptibly attuned to homeowners' routines and predilections [1].

Ultimately, the conjunction of IoT-connected devices, the advent of 5G technology and high-speed internet, the advent of smart voice assistants such as Alexa and Cortana, and an expansive network of perceptive sensors enveloping domiciles – all unified under the tutelage of cutting-edge AI systems – foreshadows the emergence of a future smart home ecosystem seamlessly interwoven into the fabric of lives.

References

1. Smart Houses: AI in the Home [Electronic resource] – Mode of access: <https://www.azobuild.com/article.aspx?ArticleID=8429> /. – Date of access: 15.03.2024.

2. Understanding Artificial intelligence (AI) [Electronic resource] – <https://www.aiplusinfo.com/blog/impact-of-ai-in-smart-homes/>. – Date of access: 16.03.2024.