Applications of AI: Smart Homes

Artificial Intelligence is a science pertaining to the task of simulating human intelligence within computers with the higher purpose of creating technological systems that can achieve specific goals (McCarthy, 2007), and in some environments they display greater effectiveness than human counterparts. One such technology that has devolved from recent advancements in AI is: Smart Homes.

Smart Home technology are modern innovations and cover a subset of different automated systems, with the Internet of Things (IoT) as its foundation. The IoT is a concept that represents systems built upon interconnectivity between devices, sensors, and/or objects. Some common Smart Home technologies that can be found within modern housing include detection and control devices, wherein heating, ventilation, lighting, security, and hardware within a property can be monitored or even remotely controlled (Alaa et al., 2017) – usually from a central interface, such as a personal device (a smart phone, tablet, or laptop) or a voice-controlled digital assistant like Amazon's Alexa or Google Home.

The introduction of Smart Home technology into our daily lives is a testament to how AI can be integrated into society to improve quality of life. Within the context of a family household, it could be used to monitor babies. Likewise, within the distinct contexts of the elderly, disabled, or ill, Smart Homes can automate otherwise difficult tasks and assist consumers in daily activities. This technology takes humanity away from a stressful life of micromanaging every section of their household.

Smart Home technology has found great success within the medical industry. Medical institutions can take advantage of the remote capabilities of IoT components to monitor patients, and solutions to automate at-home *smart* medication dispensers are being deployed to patients' homes. The benefit of this being patients not having to manually count dosages, as well as being notified through various means (receiving texts or calls via synced personal devices) so they don't miss their medication. Likewise, Smart technology in homes can be set up to provide a direct line of connection to medical professionals or family members, wherein users can communicate emergencies and receive urgent support.

This example of Smart Home implementation is much more serious than when compared to other general uses, but this specific medical context has a clear example of success – with the success being relative to ensuring the safety of medically ill individuals. Without this technology in place, it is likely that discharged patients and elderly seniors that are at home could succumb to fatalities in critical situations – as it becomes harder for them to contact emergency services, or they might forget to take important medications.

General Smart Home devices can also be used by specific demographics, such as the ones, to turn complex, menial task into simple and quick actions. If using voice-activated assistants, then carrying out certain actions around the house can be done hands-free, which has been particularly successful with users that have restricted mobility, such as in the case of being bedridden or having motor impairments.

Conclusively, it can be stated that Smart Home systems have successfully improved the quality of life of many individuals by reducing strain on themselves, their families, and third parties such as medical services – and in some instances has helped prevent many people from passing on.

It is highly likely that the sector of Smart Home technology will only grow larger as time passes by, as there are a listless number of tasks that can be automated within a household. However, there is a prominent concern that arises from this – will these solutions be affordable to the average household owner? It could be that the low affordability of these Smart technologies could lead to a stigmatization of Smart technology within lower income households, which could lead to a negative impact in the growth of Smart Housing.

Building bespoke Smart Home solutions could however become very trendy in the future. Homeowners could specifically tailor their homes to only have they Smart innovations that they want, and especially with large developments within the Smart security sector, high value persons could invest large amounts of money into securing their properties, with the advantage of having greater control over their personal assets/safety.

Overall, Smart Homes present an ideal, automated future wherein consumers quality of life can be improved as high effort, manual tasks can be replaced with technological solutions – that can be managed remotely and with minimal effort. Likewise, there are more context specific scenarios wherein users can be protected from danger, such as a medical condition or an act of aggression. Smart Homes will path a way into an automated, controlled future.

Bibliography

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