

The challenges engendered by linguistic barriers extend beyond technical proficiency to encompass interpersonal communication skills and cultural competence. Non-native English-speaking engineers often wrestle with expressing complex engineering theories, leading discussions, and persuading others in meetings, underscoring the need for holistic language education that encompasses both technical and communicative competencies. The implications of linguistic disparities resonate throughout the computer engineering workforce, impacting the overall inclusivity, diversity, and innovation potential of the field.

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### **SMART HOMES: A COMPREHENSIVE LOOK AT THE PROS AND CONS OF AUTOMATED LIVING**

In the contemporary era, the rise of smart houses, also termed connected homes, stands as a demonstration of the combination of technology with everyday life. These houses, equipped with a multitude of interconnected devices and systems, promise unparalleled convenience and efficiency. However, amidst the appeal of automation, a critical examination reveals a landscape of both promising and dangerous prospects.

The evolution of smart homes represents a paradigm shift from manual control to seamless automation. Enabled by technological advancements such as the Internet of Things (IoT) and voice-activated assistants like Amazon's Alexa and Google Assistant, homes have transcended simple living spaces to become intelligent ecosystems. With the touch of a button or an easy voice command, residents can effortlessly manage everything from climate control to home security.

Undoubtedly, smart houses have a lot of benefits. They offer unparalleled convenience, allowing homeowners to control various aspects of their environment remotely. Energy efficiency is another criterion, with smart thermostats and lighting systems optimizing energy usage based on occupancy and habits. Moreover, enhanced security features provide peace of mind,

alerting homeowners to potential threats and enabling remote monitoring of their property. For disabled individuals, smart homes offer newfound accessibility, with technology facilitating easier navigation and health and safety monitoring.

However, the promises of convenience and efficiency lie in potential threats and challenges. Privacy concerns loom large as the proliferation of sensors and data-collecting devices raises questions about the security of personal information. Likewise, cybersecurity risks abound, with interconnected devices unprotected from hacking and malicious exploitation. The specter of technological dependence is another looming challenge, as an addiction to automation leaves homeowners vulnerable to system failures and interruptions. Additionally, the initial costs and ongoing service of smart home systems may create financial barriers to widespread adoption.

Addressing these challenges requires a multifaceted approach. Industry efforts to standardize smart home devices and promote interaction are crucial for ensuring a seamless user experience. Likewise, stringent data protection laws and ethical design principles must govern the development and deployment of smart home technology, safeguarding user privacy and autonomy. Moreover, the development of a culture of cybersecurity awareness among homeowners is paramount, expanding their opportunities to protect their digital domains from potential threats.

Looking ahead, the future of smart homes appears promising, with innovations like Artificial Intelligence (AI) and Virtual Reality (VR) set on revolutionizing how we interact with our living spaces. However, realizing this vision requires a concerted effort to address the challenges and risks inherent in the adoption of smart home technology. By navigating the complexities with foresight and accuracy, smart houses hold the potential to usher in a new era of convenience, comfort, and security for homeowners around the globe.

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