## **Department Research**

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## **Environmentally-Friendly Smart Home for Elderly and Physically Impaired People**

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Abstract: This proposed research aims at developing a smart home solution that is environmentally friendly, maintains/enhances occupant lifestyles, and care users both physiologically and psychologically, especially the elderly and physically impaired people. However, there are several technical challenges exist in this environment in the areas of green communication, sensing, health and wellness and home operations. In this research project, we plan to investigate and overcome the technical challenges associated with these areas of a smart home system by developing new methodologies, techniques and systems. We believe that the key to realizing this goal lies in developing enabling hybrid technologies that are user-friendly, affordable, and allow for seamless transition as new technologies evolve, such as cloud computing, Internet of Things (IoT), 5G wireless networking, sensor networks and Fog Computing. Such an integrated system can augment current healthcare methods and empower healthcare professionals and patients with an advanced personalized Smart home for continuous monitoring, quality of diagnosis and prognosis, and finally assessing rehabilitation efficacy for better treatment, well-being and smart care. The proposed home solution will facilitate health care cost reduction, early release from hospital, quality patient care through continuous monitoring, reduced pressure on health care providers and finally accessibility to care for undeserved population in remote areas of GCC countries.

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