



Bluetooth Enabled Fall Monitoring and Activity Detection with Ultrasound

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This project focuses on the ability to detect activity and motion of an individual in the minimally invasive approach that does not invade privacy in areas of the home such as the shower and bedroom. The technology that is utilized comprised a combination of sensors in the environment, social media for remote alerts, as well as wireless links between nodes so that installation can be performed in a minimal time frame. Progress on this project will be covered since the last publication as well as future directions. The portion of the electromagnetic spectrum that is utilized is ping sensors in the ultrasound range that are commonly used for robotic navigation. This differs from radar based approaches and does not penetrate walls. Additionally, it is unique in the application of wifi as well as the location of implementation which is focused on the living space of an individual where they are not clothed. The detection of heat signatures as well as the height of an individual is essential as well to limit false alarms due to furniture and pets.

References:

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2. Sahar Abdelhedi, Riad Bourguiba, Jaouhar Mouine, and Anis Youssef, "Fall detection FPGA-based systems: A survey," International Journal of Automation and Smart Technology 2016(6): 91-202. DOI – 10.5875/austmt.v6i4.1105