Smart Safety Warning and Notification System for Treadmills

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Nearly 460,000 people were sent to the hospital in 2012 for injuries related to exercise equipment, according to USA Today. Treadmills are the number one cause of exercise equipment injuries, comprising 66% of injuries. Treadmill accidents have nearly tripled in the last 20 years, and since the invention of iPhone treadmill accidents have gone up 45% (Source: Washington Post). No seamless solutions currently exist in the market that prevent, warn or notify someone in the event of a fall from a treadmill. The Smart Safety Warning and Notification System for Treadmills (SWANS), aims to solve the problems due to treadmill related accidents. SWANS is a combination of hardware and software. The hardware, mounted on the treadmill dashboard, consists of a Microprocessor, Bluetooth module, an Ultrasonic sensor and an Accelerometer to gauge how far the runner is from the treadmill's dashboard. The hardware communicates with the app 1000 times per second. The software runs as an iOS app, Android app, or an app on Apple's Watch OS. Swans splits the treadmill's belt into 3 virtual zones, set by the user on initial use of the app: Green: part of belt runner feels comfortable running. Yellow: part of belt runner feels nervous running. Red: end of the treadmill and beyond/around. No feedback is provided to the runner in the Green zone. When the runner enters the Yellow zone, the runner gets haptic and audio feedback. Red Zone is where the runner is considered to have fallen off the treadmill. Incase the runner needs help or is unresponsive, the software provides audio feedback as well as haptic and visual feedback. In addition to this, phone calls and text messages, with geo location coordinates of the fallen runner, are sent to preconfigured emergency contacts.

Awards Won:

Fourth Award of $500