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Capstone Proposal

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My advisor is Dr. Rick Corey.

I intend to create a system that will monitor people with dementia and report when they leave the home. It tackles a common and serious problem that people who suffer from dementia or care for people who suffer from dementia face. People suffering from dementia often wander or leave the home without telling anyone, or having a reason to. Wanderers are usually unaware that they have wandered. People who care for those suffering from dementia worry that their ward will wander into dangerous situations.

Current solutions involve wearing a pendant, anklet, or bracelet or carrying a phone, which can make someone feel like a prisoner. Another currently implemented solution is surveillance hardware, cameras and motion detectors, and requires someone monitor them. My proposed solution is to use iBeacons to monitor if the person is still in the home and alert a caregiver if they were to leave. iBeacons use smart Bluetooth technology to constantly broadcast a signal containing limited information. A central hub will listen for the packets and if it loses the signal notify a caregiver or emergency services. This solution can be implemented non-intrusively with a small beacon that could be enclosed in shoes or clothing.

To date I have begun preliminary investigations into different iBeacons manufactured by Estimote and Bluecats. I suspect I will use the Bluecats beacons because they are smaller and more

general purpose. I have used Unity3d to develop a simple proof of concept app for android that allows a phone to monitor the presence of any numbers of beacons.