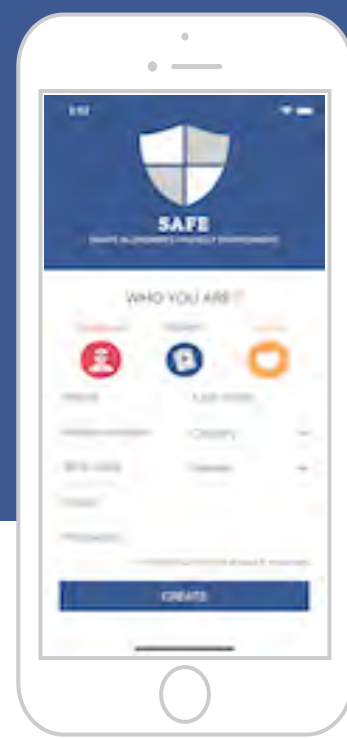# Smart Alzheimer's Friendly Environment

An IOT solution targetting Alzheimer's patients

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Problem

Alzheimer's disease is one of the leading causes of death in the world. With no cure at the moment and no alternatives offered to them, patients slowly start to fade away.

Goal

To provide a solution that aims at seamlessly gathering data pertaining to the patient and processing the data through an autonomous agent in a way to improve the patient quality of life.

ANDROID APP ON
Google play

Download on the
App Store

System Architecture

Mobile Application
User-friendly control center allowing patients to manage the components of the solution

SAFE

Smart Bracelet
Device used for live monitoring of the patient behavior

Smart Things Tracker
Tracking device allowing the patient to keep an eye on his items

Backend Server
Implemented in the cloud and used for fast processing of intelligent algorithms

Most illnesses attack the body; Alzheimer's destroys the mind - and in the process annihilates the very self
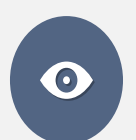
- Jeffrey Kluger

Components

Outdoor tracking

- GPS tracker attached to the Smart Bracelet
- Patients can use the App to reach specific, already set, destinations
- System saves the patient's whereabouts for later analysis

Indoor tracking

- Based on the Wi-Fi fingerprinting technique
- Generates a floor-plan of the house on which the exact position of the patient is displayed
- System uses indoor positioning to track repetitive patterns such as entries to the toilets

Object tracking

- Hybrid device that works on Bluetooth and Wi-fi
- Patients can get the exact in-house position of the tracker. An estimated distance is also provided when located outdoor
- System saves lost items for later analysis

Behavior Monitoring

- Live monitoring of the patient through sensors attached to the Smart Bracelet
- Fall detection, sleeping patterns, heart rate, body temperature, room temperature and so on...
- System saves all data for later analysis

Behavior Analysis

Training Sets Based On Real Cases → Back-Propagation Training

Continuous Data Collection → Reports Generated Monthly → AN Agent

AN Agent → Disease Severity Assessment