Stairs - Idea

Counting steps accurately on mobile is an open problem area. A subset problem area is to count the number of steps taken to climb a flight of stairs (up or down). Using on-device ML preserves users privacy while improving accuracy over time as model improves. An advanced feature and stretch goal is to accurately detect how many times the user took the elevator..

Details

Problem Area

1. Accurately detect number of stairs taken
2. Detect if elevator was taken

Solution

1. Use mobile device to capture accelerometer and gyro data
2. Apply standard step counting algorithms to compare against Android's SDK API
3. ML model to detect steps taken to go up or down a flight of stairs.
4. Take user inputs to improve the model over time
5. Elevator detection model

Timeline

1. Jan 2020 - Stairs detection model
2. March 2020 - Improve accuracy and optimization by training on recorded sessions (test cases)
3. May 2020 - Publish to Play store
4. Beyond - Work on Elevator detection

Project code to be tracked on Github in open source.

About Me

I am an amateur fitness enthusiast. I love the potential of fitness data collected by smart devices, and their impact on behavior. I have been fascinated by the power of these simple measurements and machine learning to make these significantly powerful.
I am also a professional developer with over fourteen years of experience of writing software for embedded systems.
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