

Padraig O Cosgora

4th Year BEng. Software & Electronic Engineering
Student Number:
G00311302

AI Companion

December 09, 2019

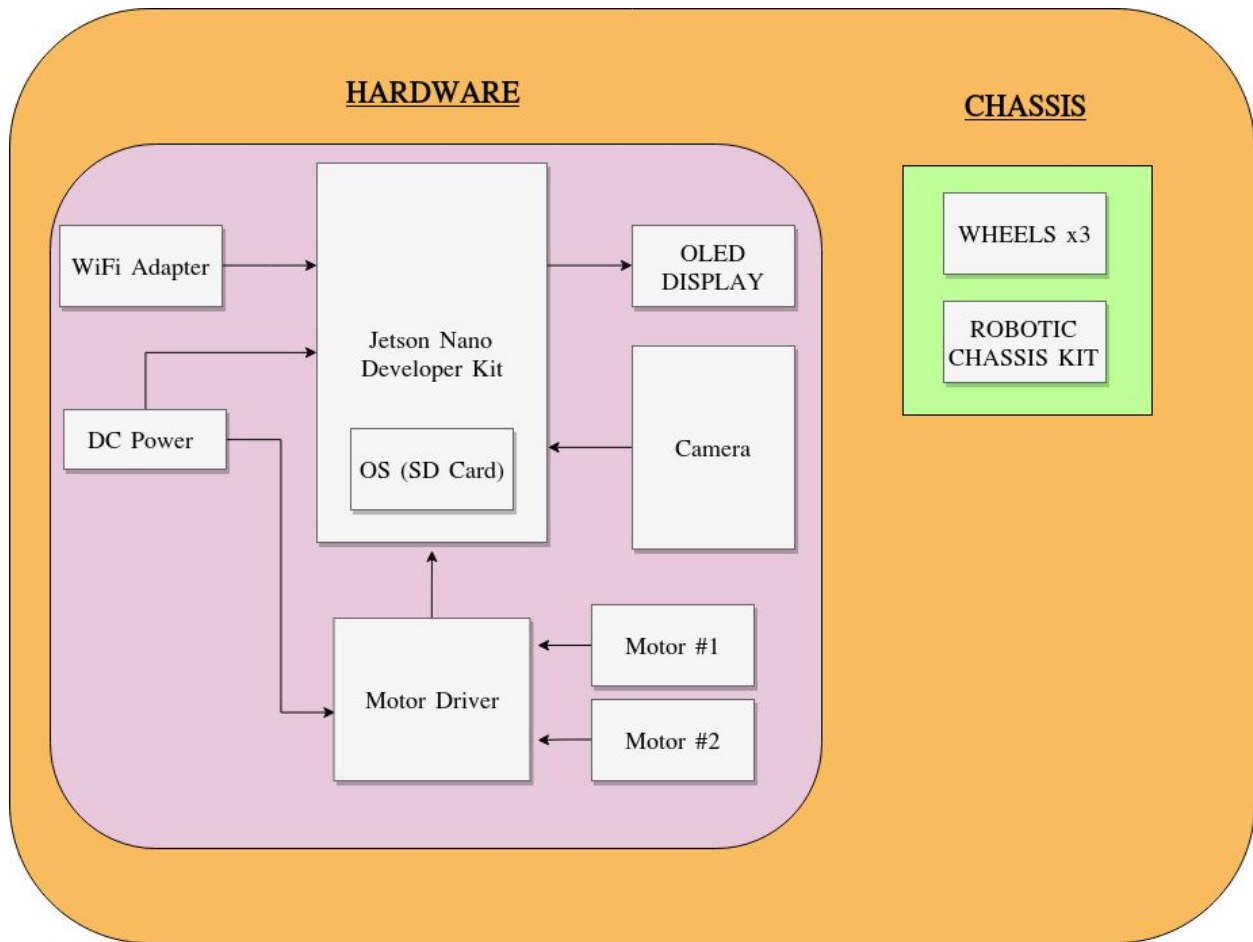
Overview

The AI Companion Robot is a home-assistant robot that can move across floors, carpets and mild terrain. Equipped with a HD video camera, the AI Companion Robot will recognise faces, pets, rooms and objects. The AI Companion Robot will intelligently operate around the house by avoiding objects and monitoring who's in the house (via face recognition) and what room they're in (via room recognition), This robot can serve as your eyes and ears when you're away from home.

Goals for December Demonstration

1. **Obstacle Avoidance** Train a machine learning model to recognise when it is blocked or free to move forward, while operating around the house (or just in a single room to begin with).
2. **Object Detection** Detect objects(including people) and follow them.
3. **Facial Recognition** Recognise faces, store them in a local database and compare all new faces to the old faces in the database.

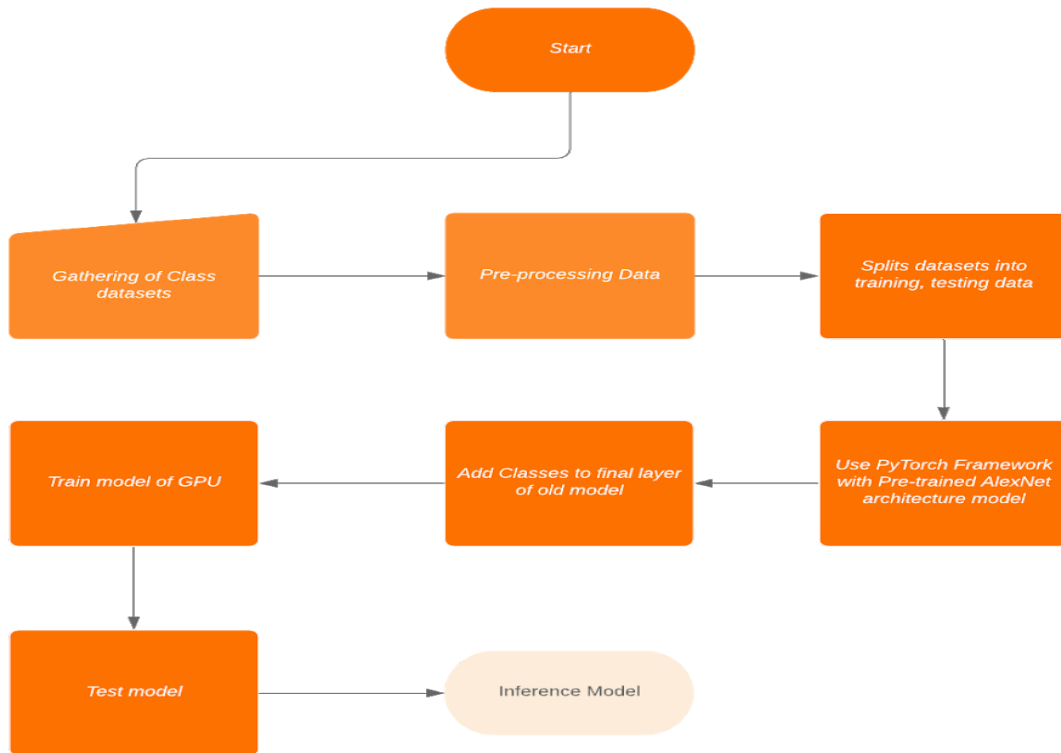
Specifications



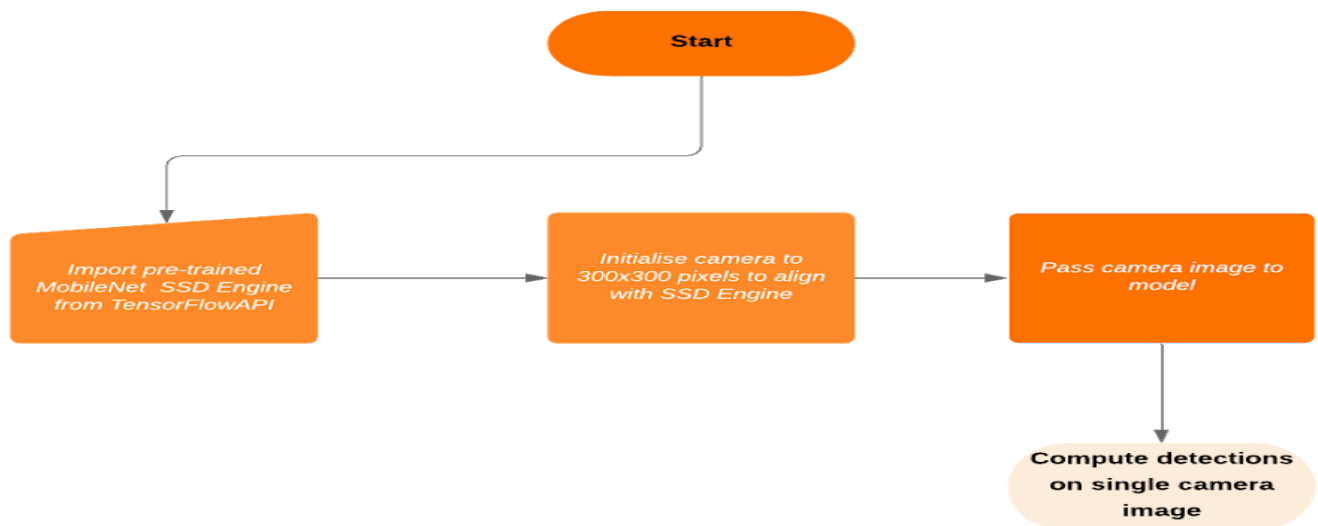
Milestones

1. Facial Recognition working
2. Collision Avoidance working (based on local model)
3. Object detection and following working (based on local model)

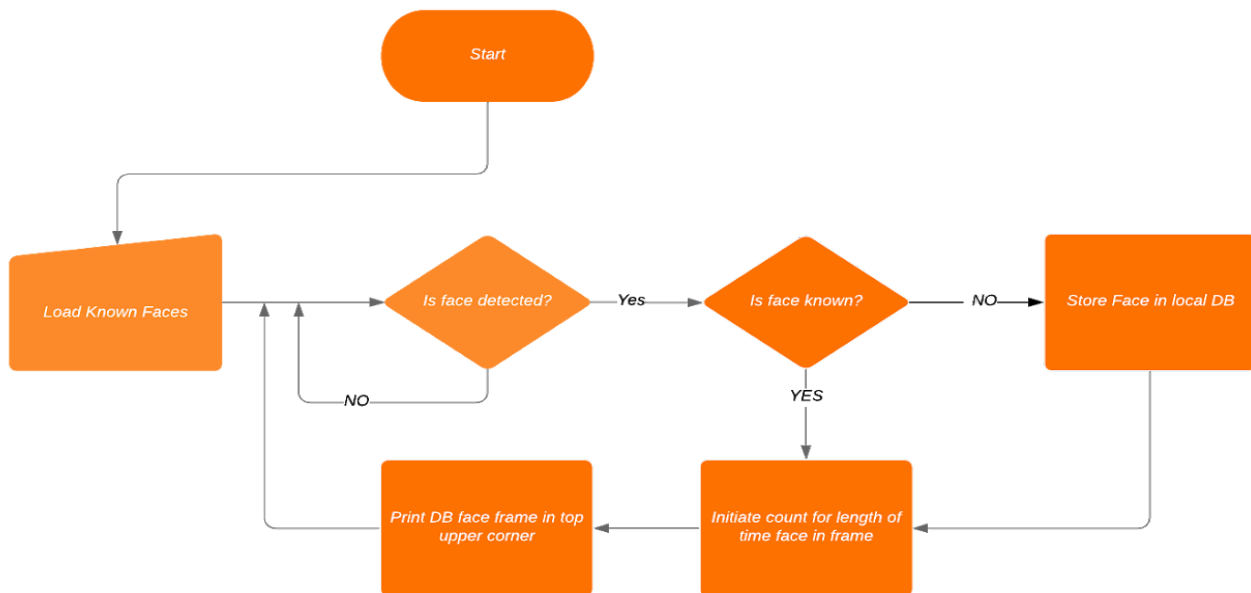
Collision Avoidance



Object Detection



Facial Recognition



Portfolio

