

***Some* Train of Thoughts**

Identified the problems faced.

Identified the different stakeholders

Google solutions for them.

Ended up with Augmented Reality for rehabilitation or AI counselling

Chose Augmented Reality for rehabilitation because it is feasible yet no one else is doing it.

It also reduces cost and alleviates the physiotherapist shortage problem.

We divided the team into two. One will deal with the enterprise side, the other will deal with the engineering solutions.

Model

We think that there might be a need for 2 types of modeling

1. In the early stage, we would be compelled to use a more simplistic model such as linear regression or gradient descent that can produce reasonable output with a small amount of data with a short training time. This way, we can give the users a faster response time for their next step.
2. In the advanced, stages, when we have more data, we are able to employ artificial neural network and deep learning, which are proven models for training robots to walk. Using this models, we are able to create a rehabilitation guide that creates better predictive results in helping patients to rehabilitate progressively.

For us to use the early stage models properly, we need to engineer relevant features (eg. deviation of steps, vectorized movement of leg, time taken for step) from the raw sensor input (eg. accelerometer and gyroscope). From which we will generate the output (next step position), so as to assist the patient with progressive rehabilitation without the supervision of a physiotherapist.