

Rapid Prototyping with Machine Learning

Andreas Refsgaard

2018



Case: Vivify



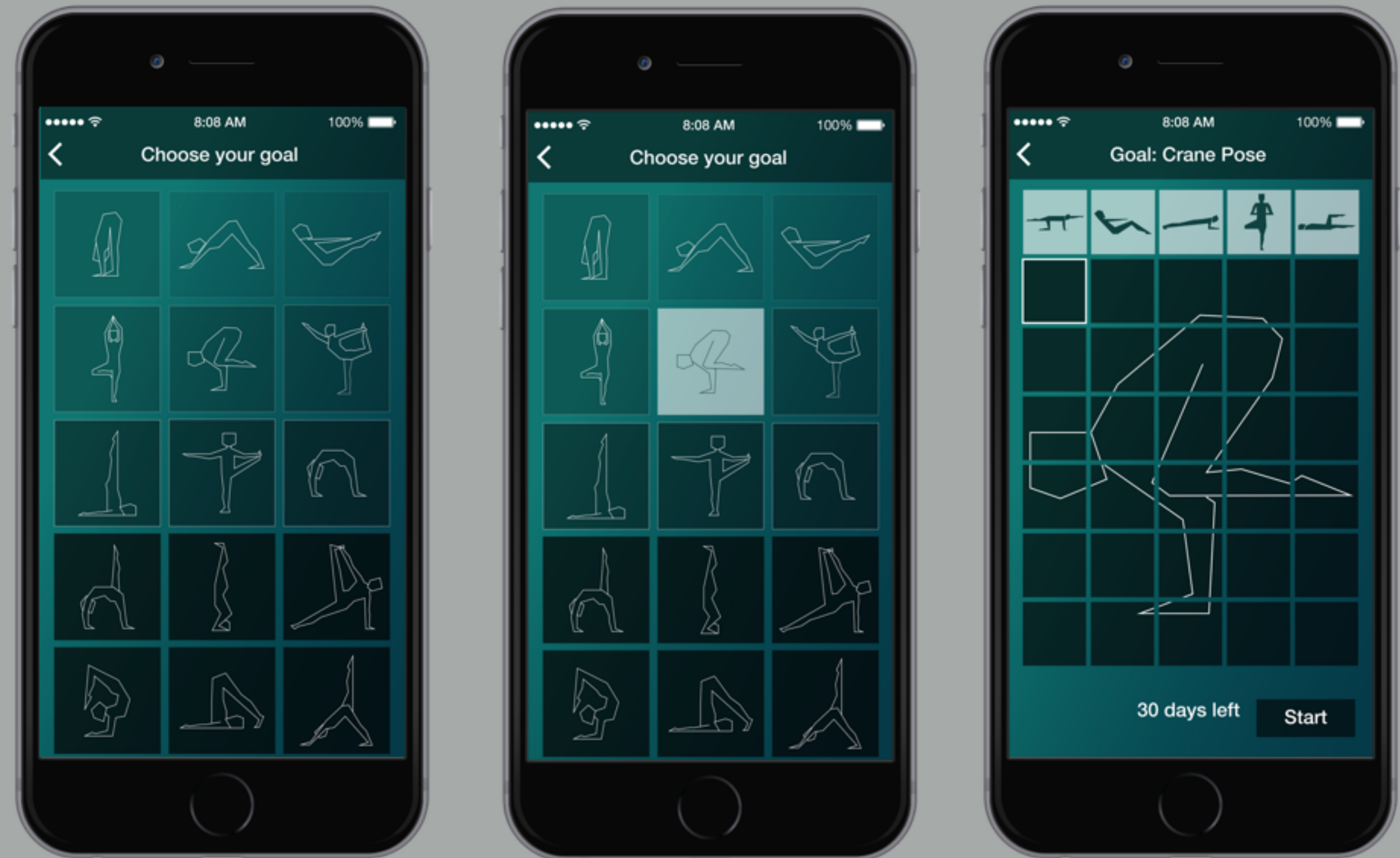
What:
Interactive Yoga Mat + App

Who:
Victory Hammel (IDP 2015,
IDEO Chicago)

How:
The mat knows what
exercises people do, and
gives them instant
feedback

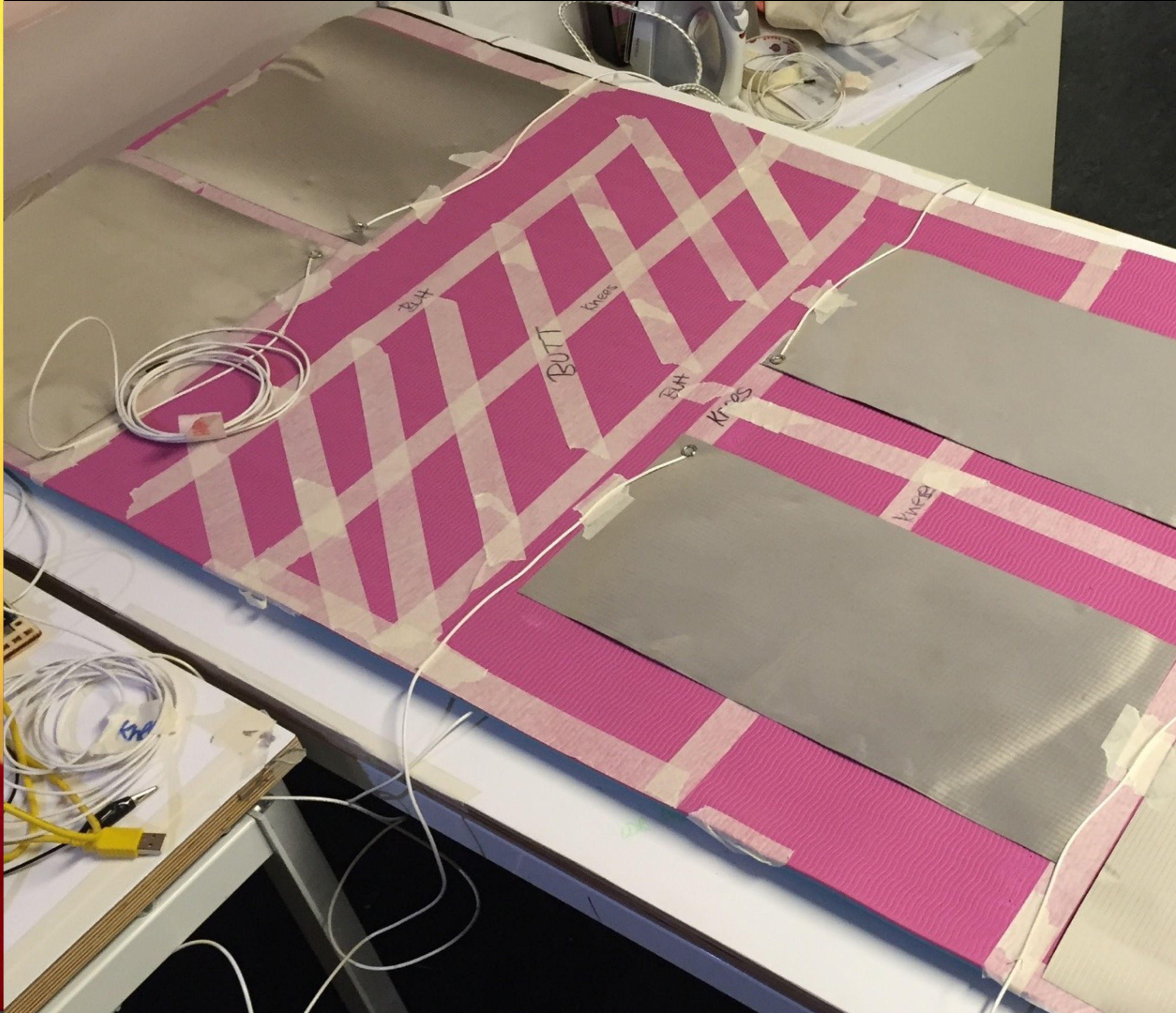
Tech:
Arduino, Pressure Sensors,
Smartphone App

Project length:
8 weeks



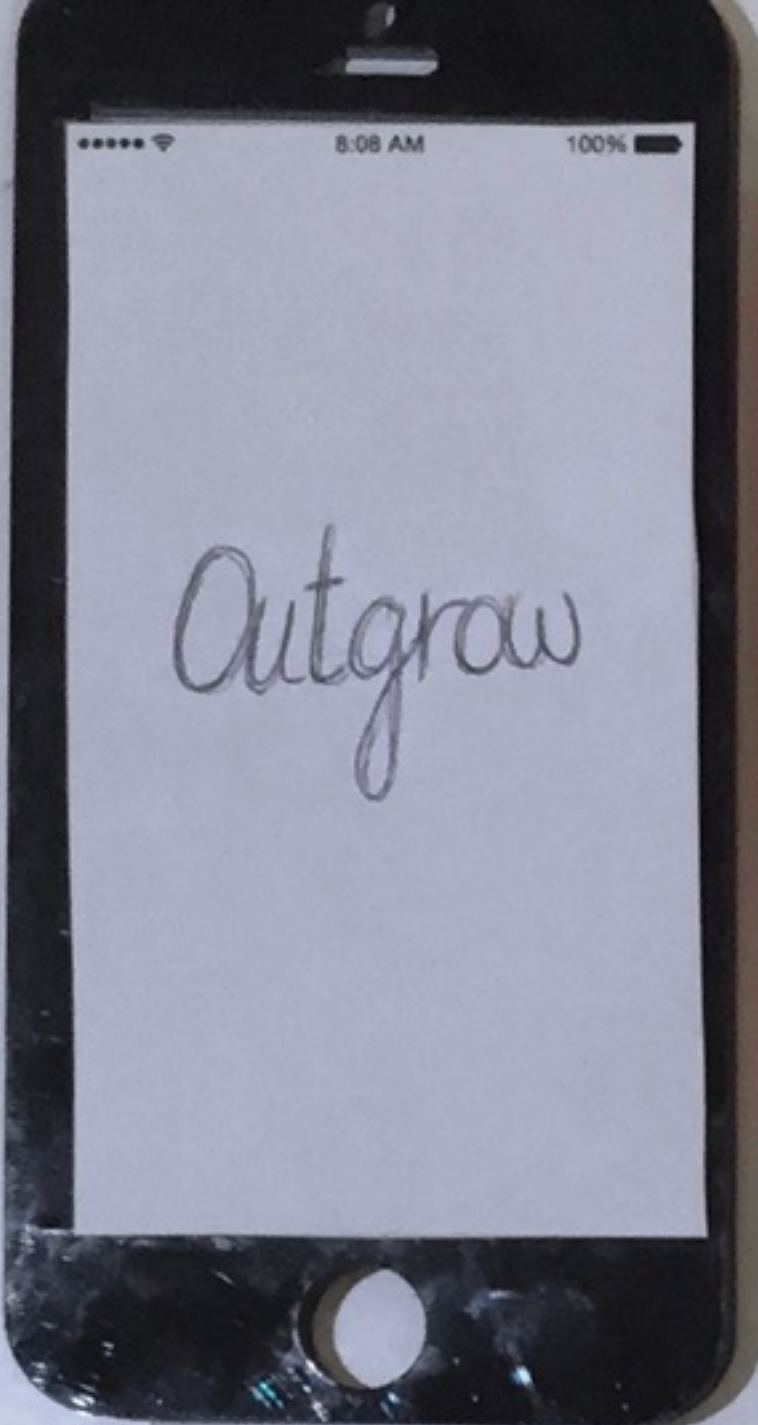






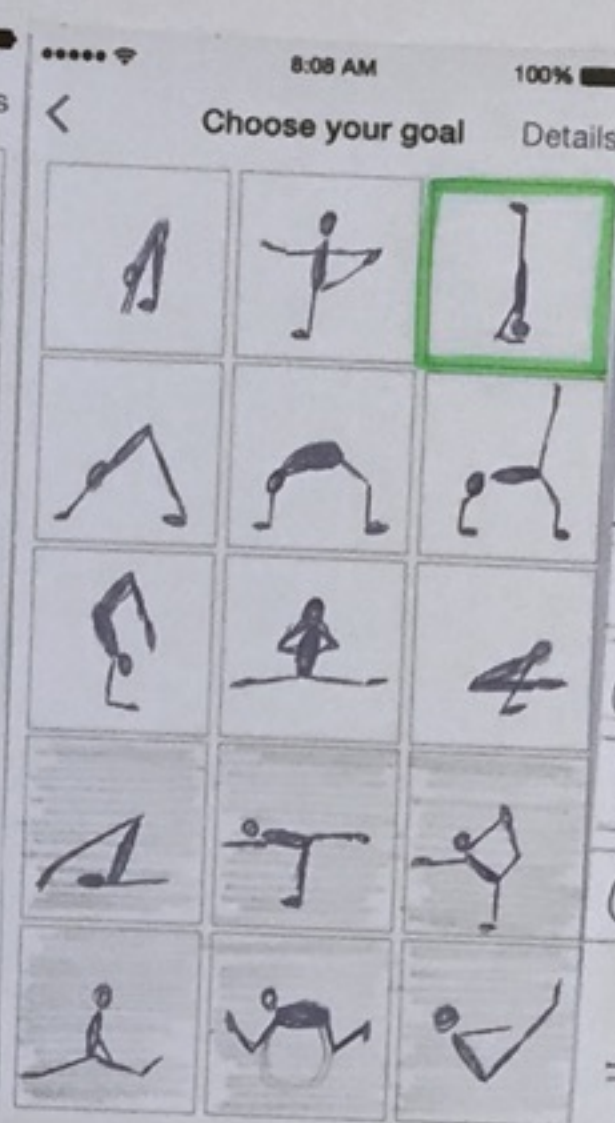
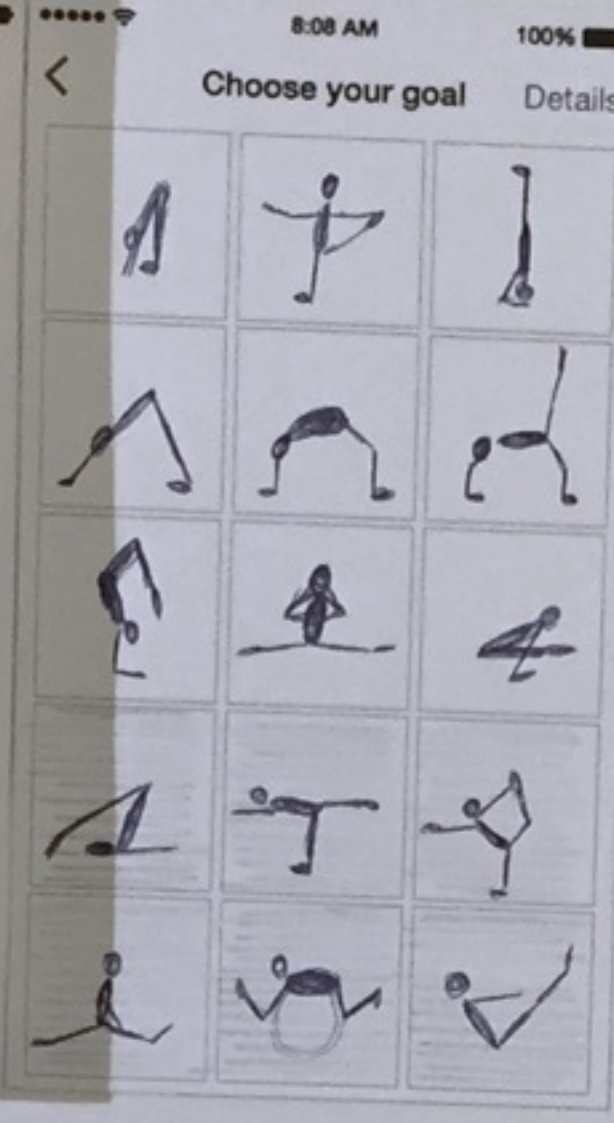
Input -> Decision algorithm -> Output

Pressure sensors -> if statements -> Playback movie

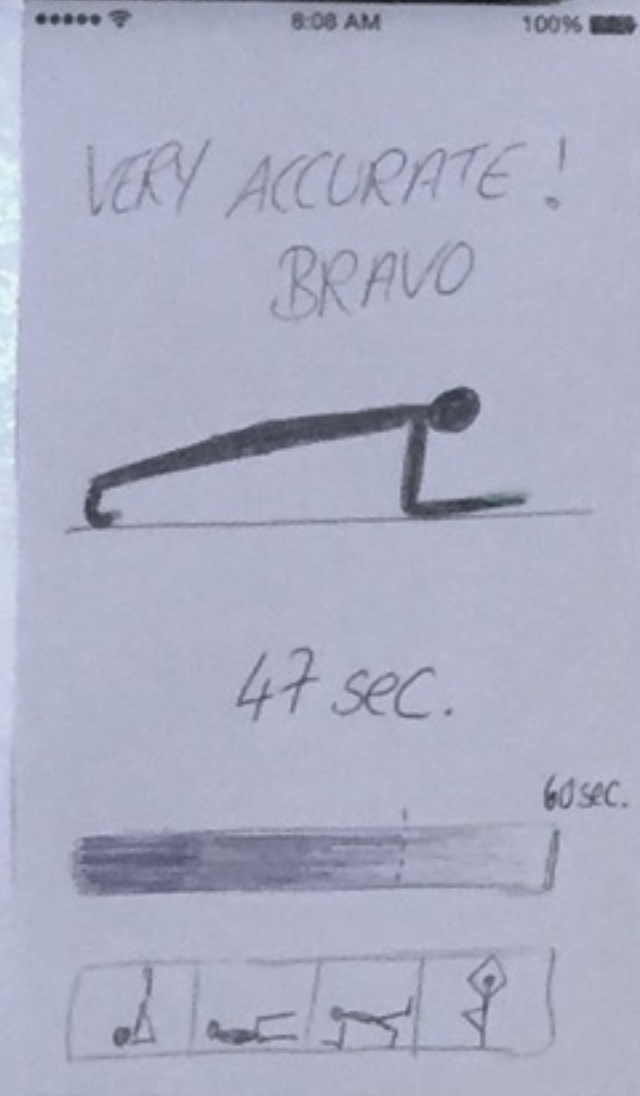
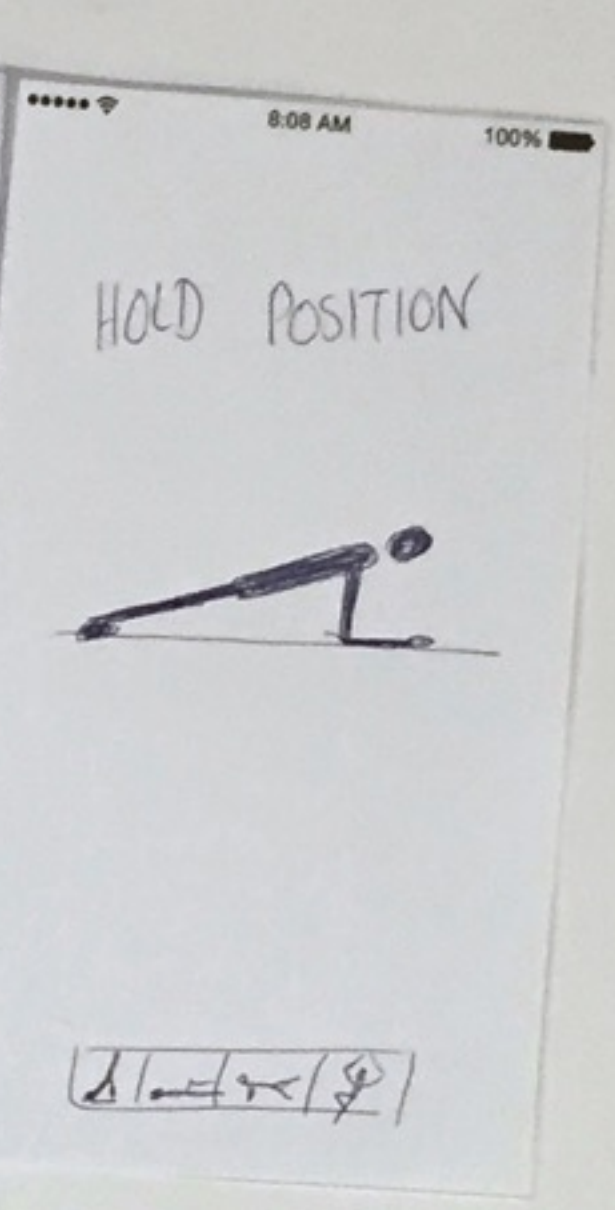


Would you want to wake up every day for 30 days doing this exercise?
Hannah! issue?

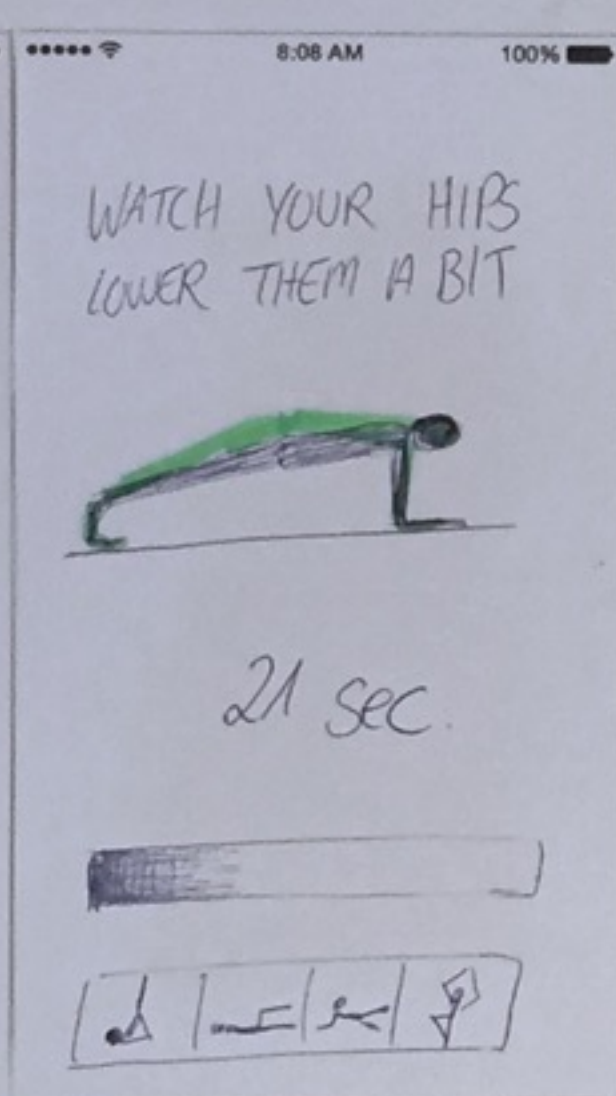
Would you want to have the option to choose how often & how long or do you want to do it?
30 min.



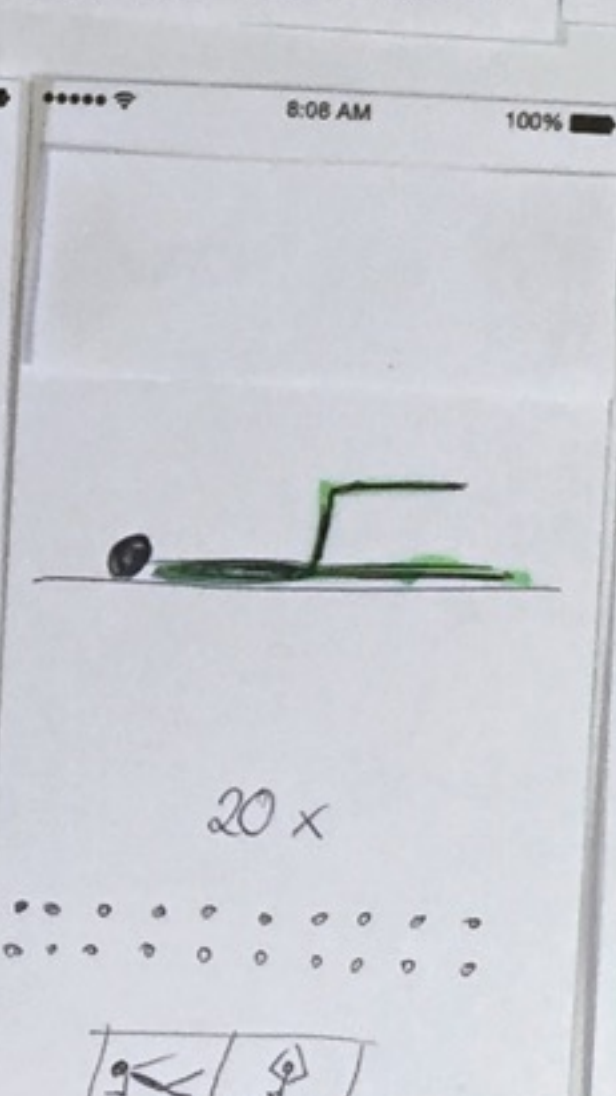
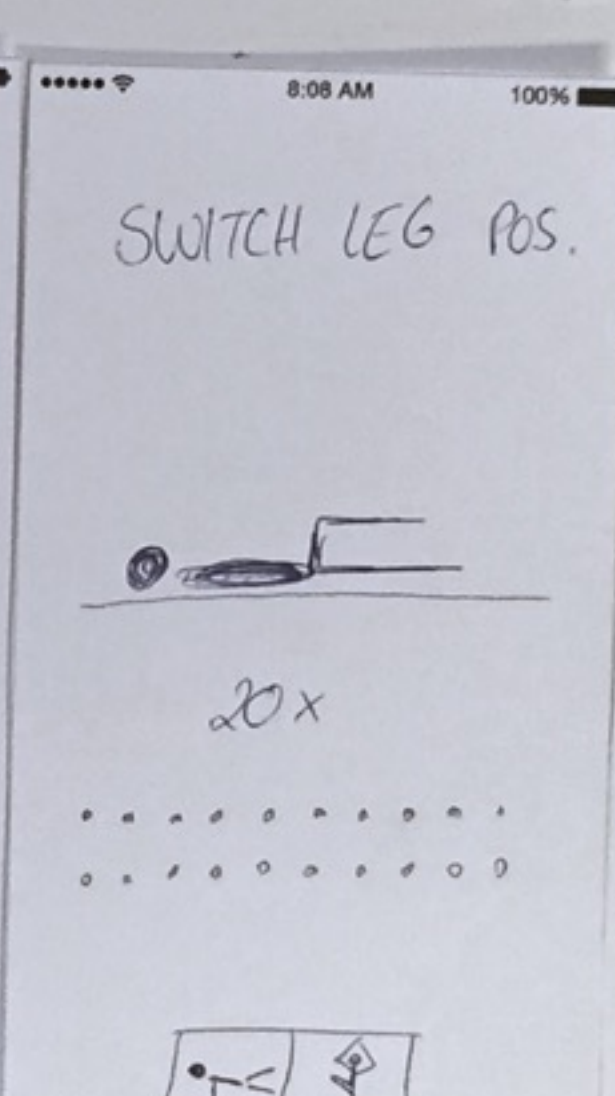
STEP ON THE MAT TO DO YOUR FIRST EXERCISE



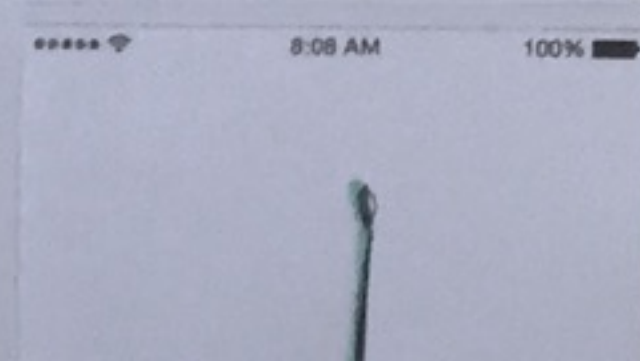
POSITION YOURSELF ON THE MAT TO START



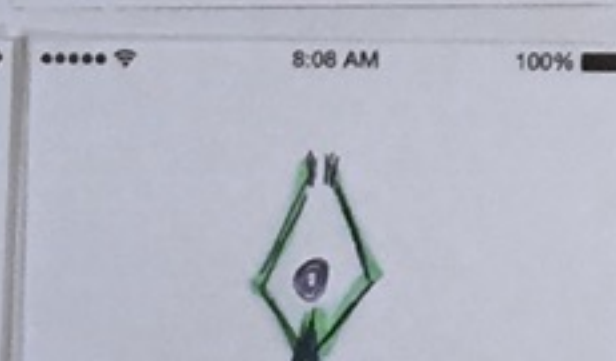
WELL DONE!



WELL DONE

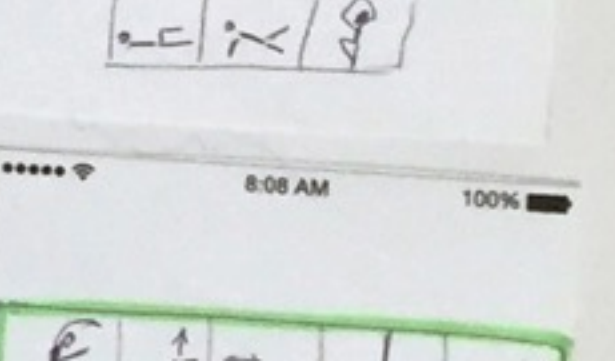
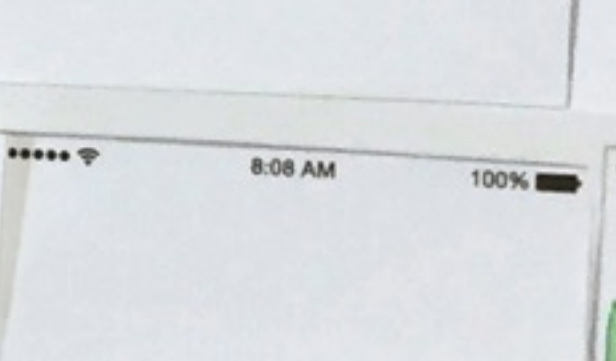
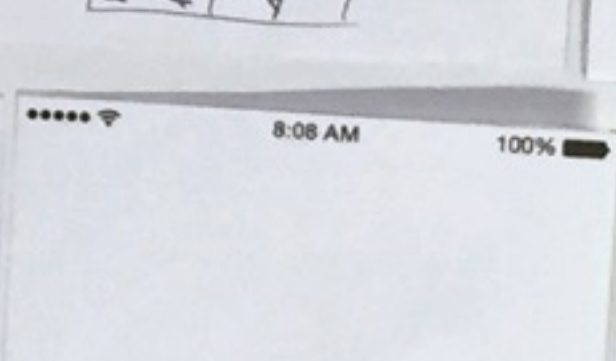


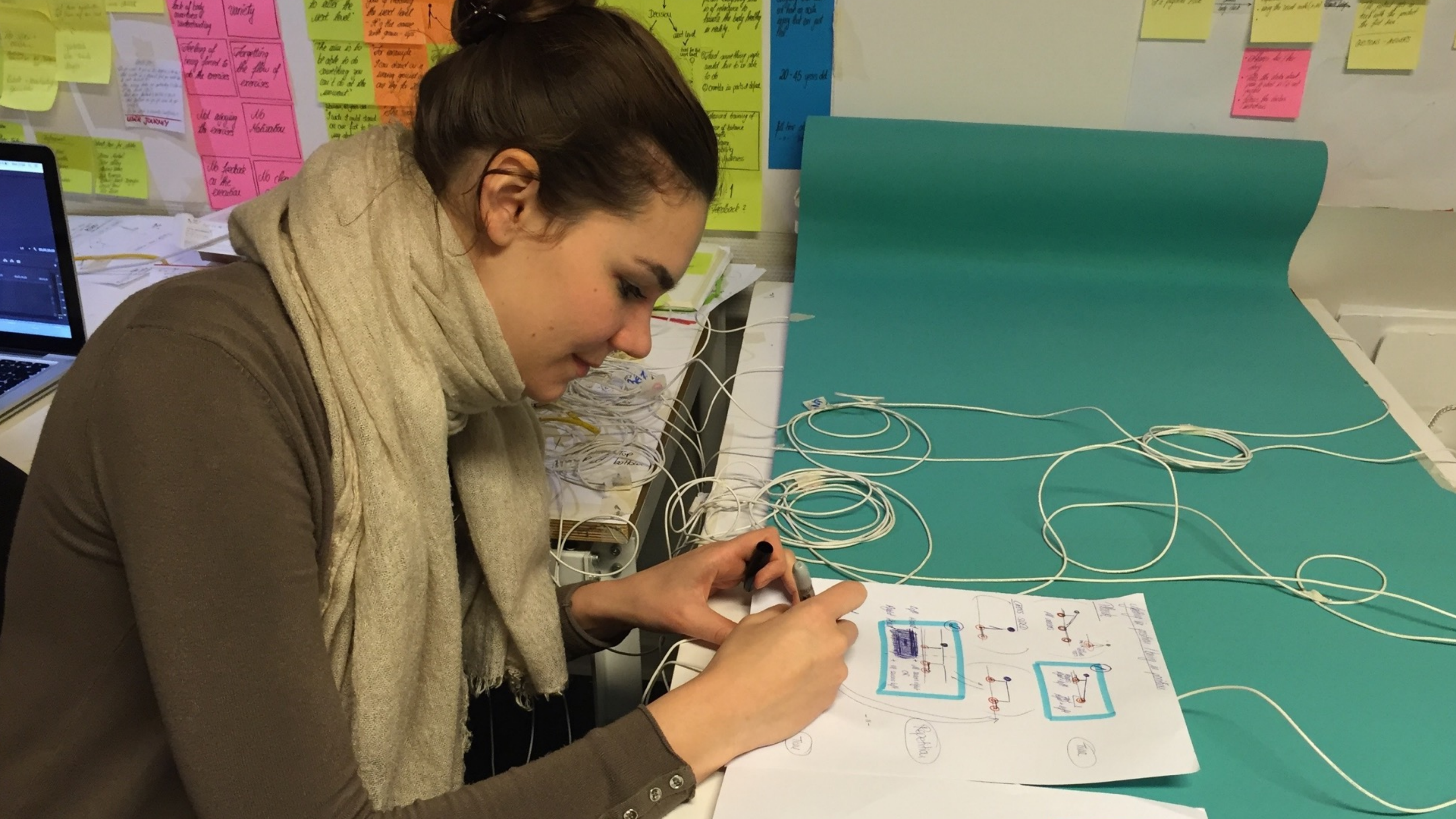
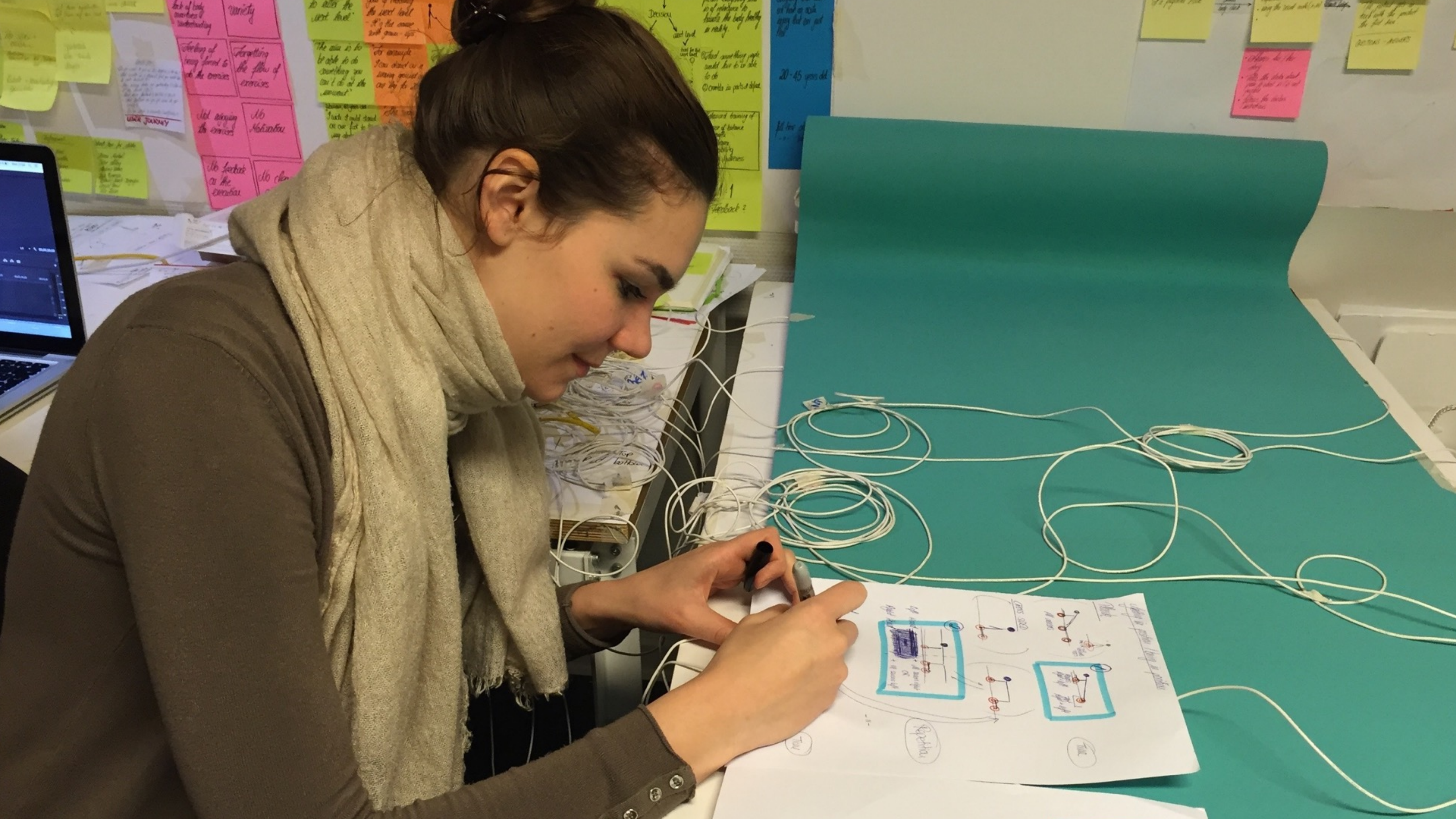
WELL DONE

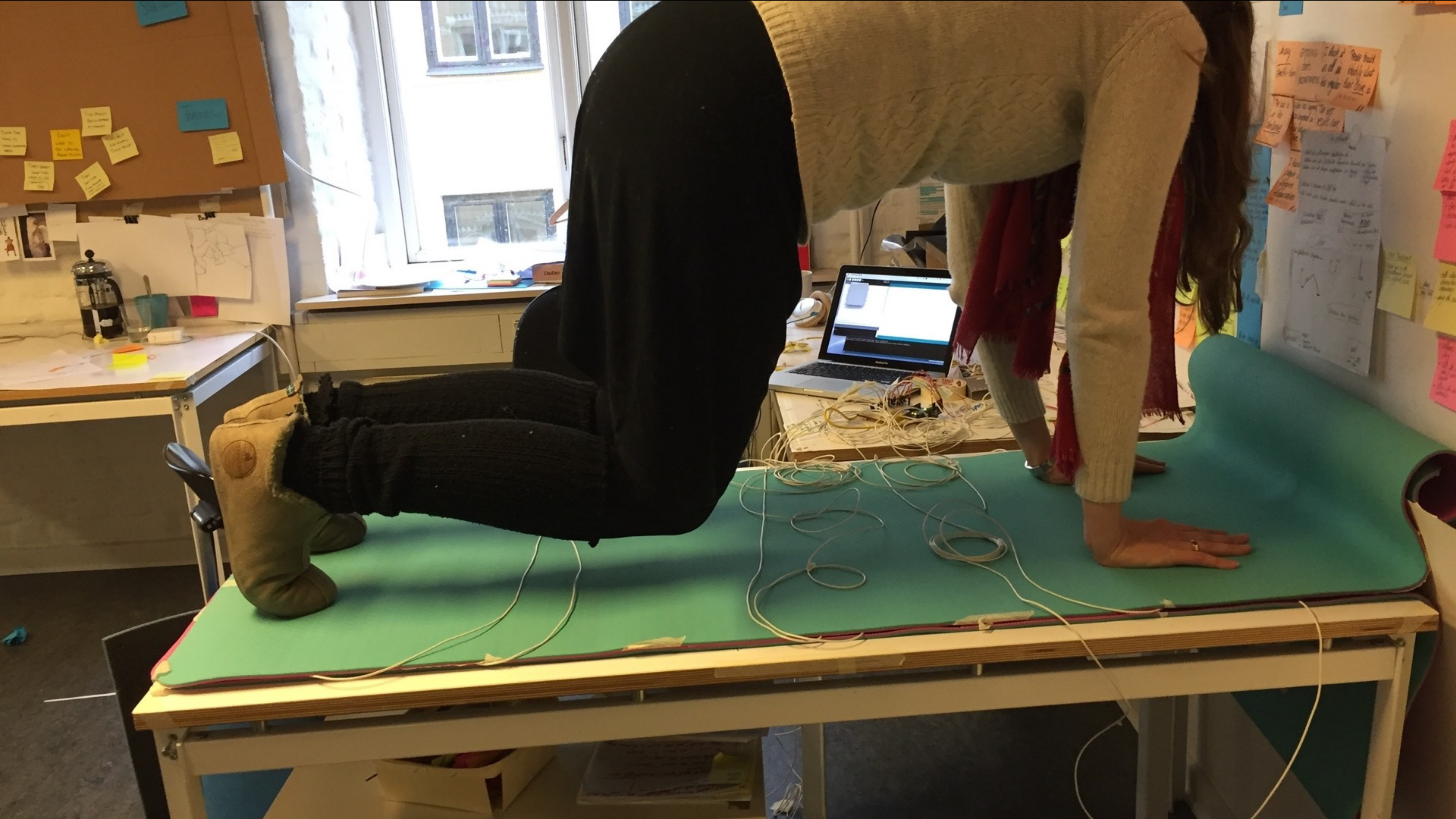


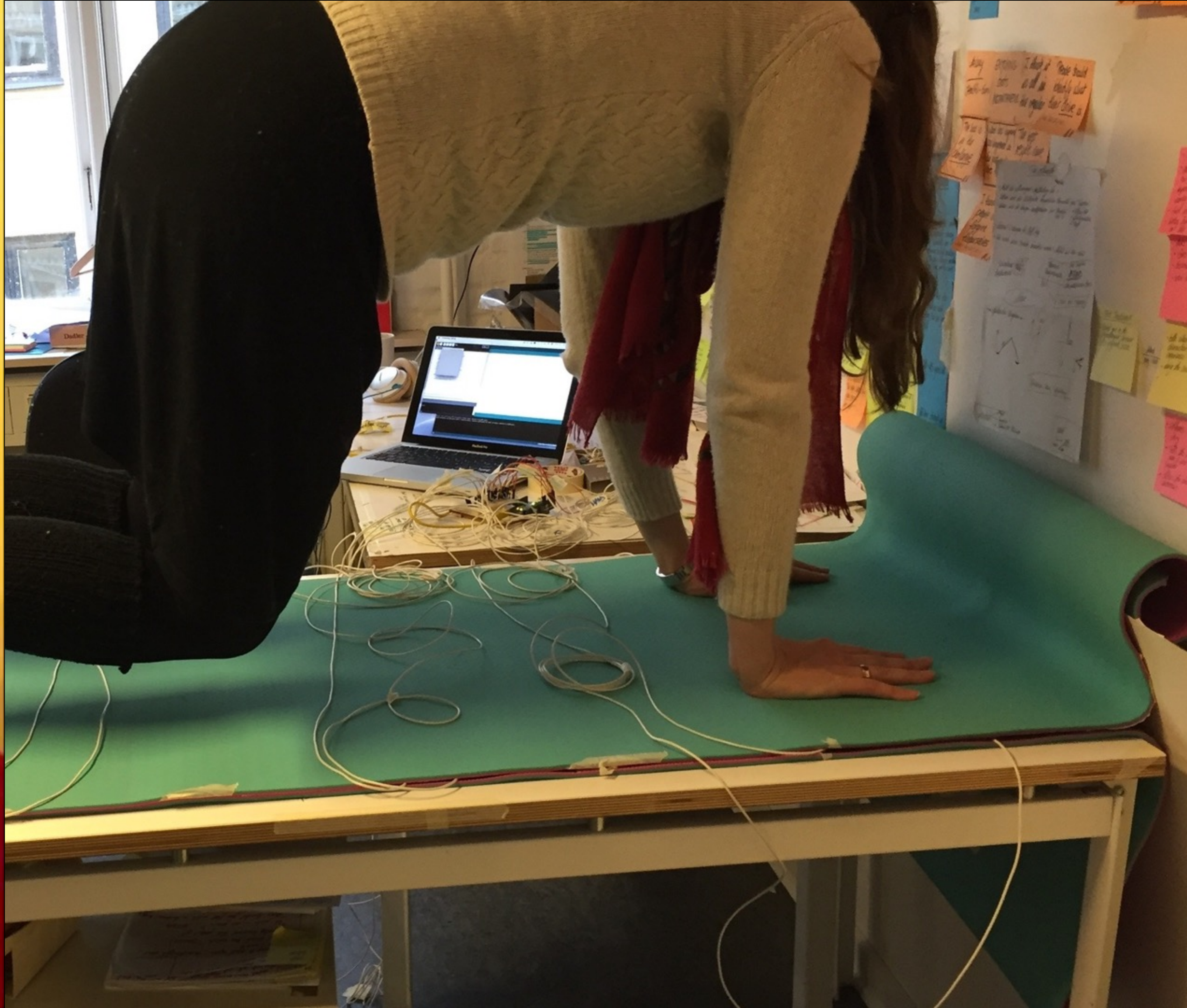
LIFT & SINK LEG

WELL DONE

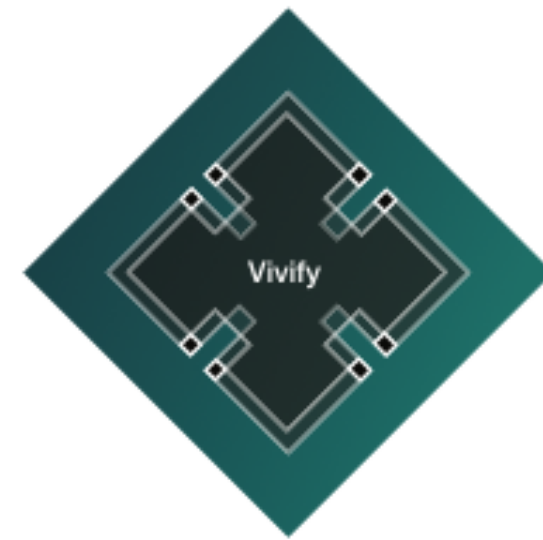








Exercise: Try to redo part of Vivify in one hour



Use Convnet0SC(mac) + Wekinator to
distinguish between 3 different yoga poses



Input -> Decision algorithm -> Output

~~Pressure sensors -> if statements -> Playback movie~~

Webcam input -> ML algorithm -> (Playback movie)

1 hour Rapid ML Prototyping

Redo Vivify in 1 hour

Link: victoria-hammel.com/vivify

What: An interactive yoga mat
that knows what yoga positions are being made on it

Inputs: ~~Pressure sensors~~ webcam + ConvnetOSC

Decision logic: ~~If else statements in code~~ machine learning classification

Outputs

Up to you! Show an image or a gif, playback a movie, play a game?

Groups

Work in groups of two or three. Distribute the Macs.

https://twitter.com/floatono_k/status/955903433885798400