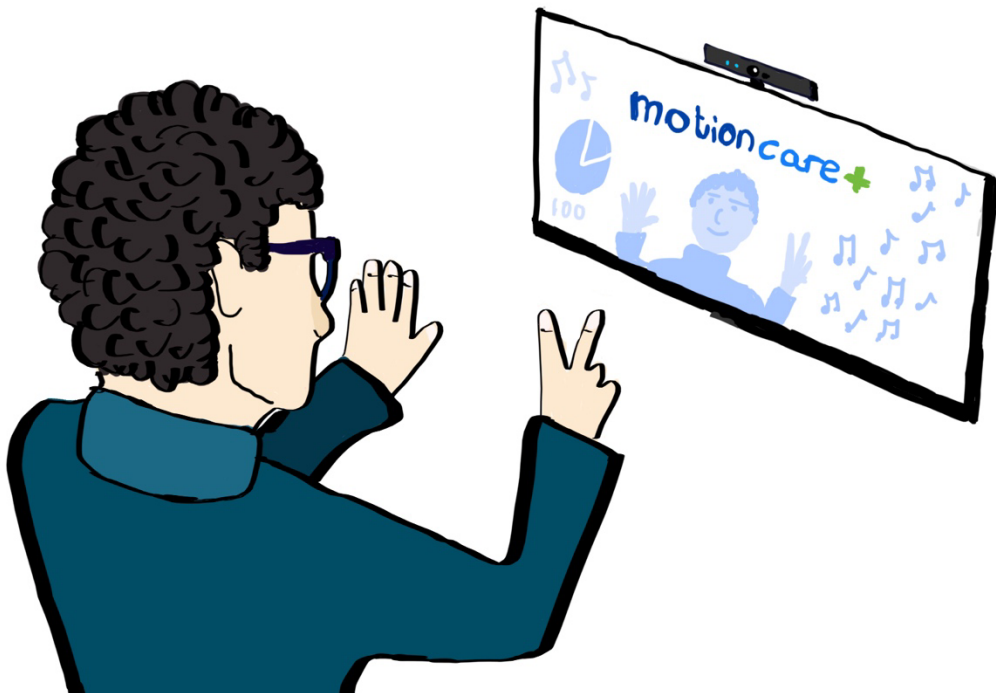


motioncare+

Motioncare Plus software aims to **gamify the physical rehabilitation process** for stroke & chronic pain by integrating gesture recognition into **an intuitive rhythm game**. Without the requirement for specialist hardware, Motioncare Plus uses a **model trained on the classification of gestures** to extract information **solely from a**



- Intuitive Matching of Hand Gestures to **Rhythm Game**.
- Varying Difficulty – allows users to **start comfortable** and work up.
- Score based **evaluation** to track progress over time.
- AI to facilitate **level recommendations** at users' skill level.

motioncare+ analysis

Computer Vision & Recognition

- Gesture Recognition with Google **Mediapipe**
- Gesture Confidence Rating of **0.8**
- Recognises **Gesture, Handedness & Hand Count**
- Gestures are classified into **8 categories**.
- Webcam output captured using **OpenCV**

Use Cases & Target Audience

Physical Therapy

Gamify completion of motor-skill exercises in physical therapy for stroke recovery & chronic pain rehabilitation.

Dementia

Pairing gestures and music has shown to improve cognition in sufferers of dementia.

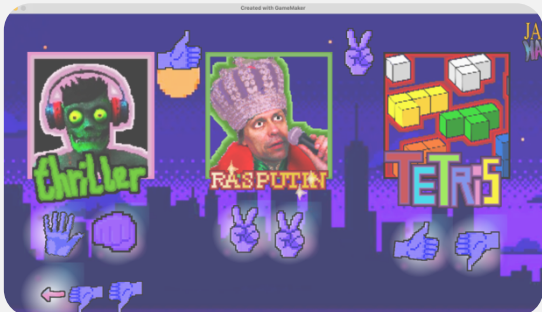
Old Age

Hand motor skills decrease with age, gamifying the practise of exercising the hand promotes healthy habits.

motioncare+ development

Previous Works

- Developed originally for a Hackathon (**1st Place**)
- Demo at **CHART** Christmas Event
- Originally using **TensorFlow**



Current Version

- Developing **Environment Calibration** Approaches
- Developing Camera Calibration Approaches
- Creating **Tutorial**
- Improving **User Experience**
- Gathering **Feedback**
- Improving Song Variety

Future Plans

Investigating further approaches in the **healthcare sector**.

Further development to **support mobile** (more accessible)

Investigate new modes and creating a more **tailored user experience**.

Further **user testing** across a wider demographic.