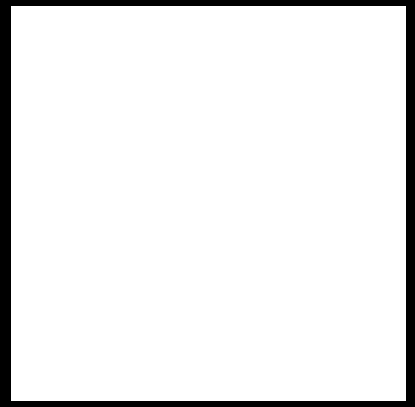
ual: london college of fashion

PLAYFUL SOFT SYSTEMS WORKSHOP

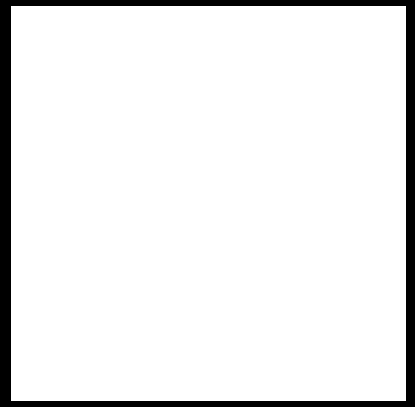
Emma Hamshare | 2024 MICROTEACH

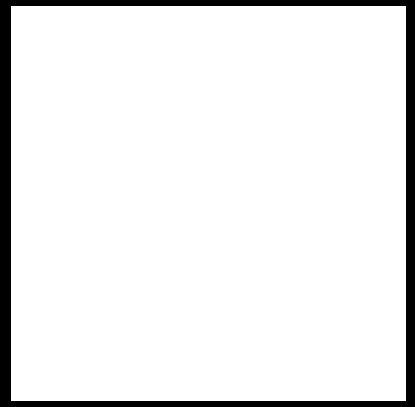
Ehamshare@fashion.arts.ac.uk

Material & Conductivity

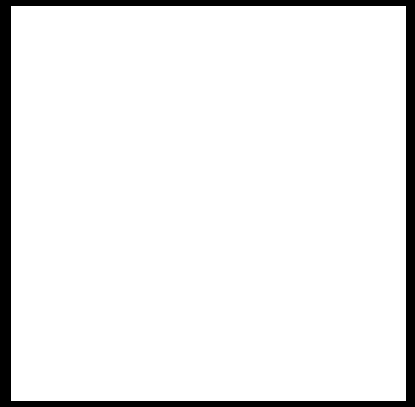


CIRCUITS + -





Textile interfaces are places
where physical and digital worlds can meet
These can be used for design, art & solving problems



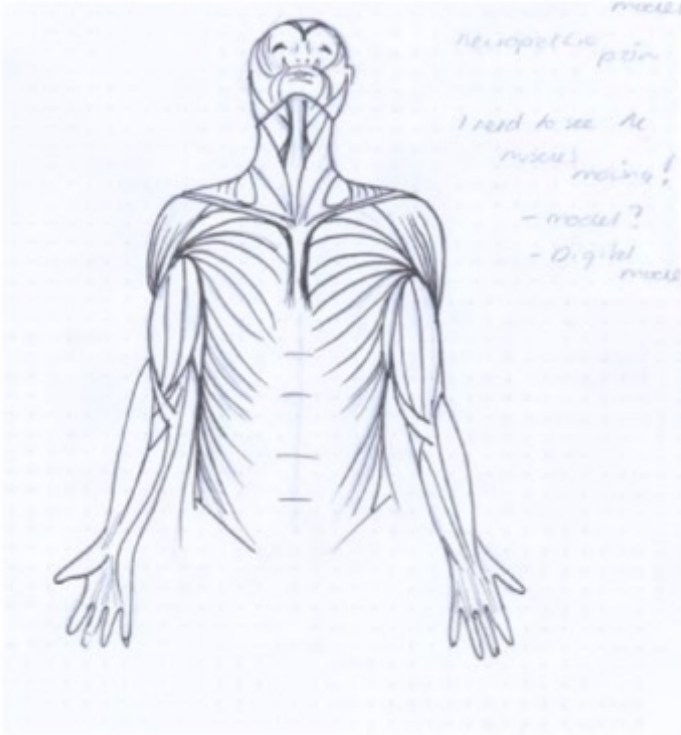
Spacesuit Project at Imperial college

Scenario:

- **Using arms as legs**
- **Muscle wasting**
- **Tiny space on the International space station**
- **Current bulky weight training system**

Koichi Wakata Gets a Workout on the ISS in 2014
Photograph: NASA

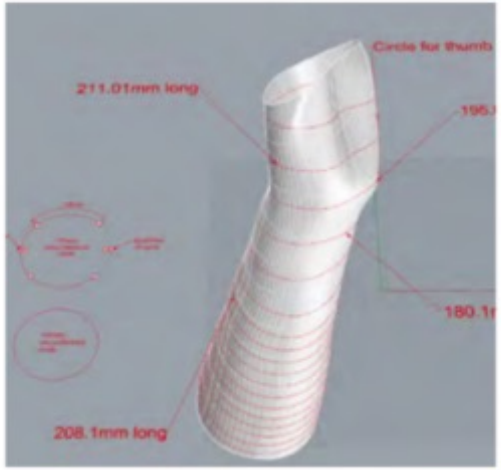
DESIGN THINKING & MOTION CAPTURE

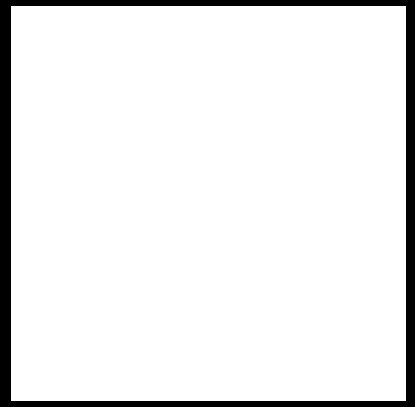


Motion capture & 3D modelling

3D body modelling in rhino from motion capture information.

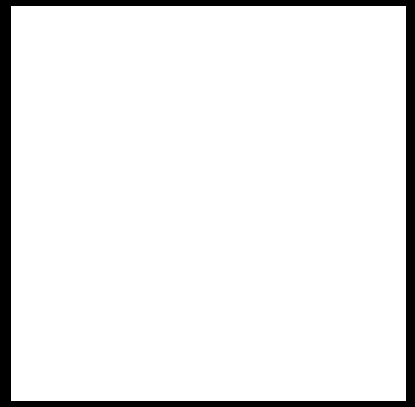
Working In collaboration with engineer Rejin Varghese. Rejin is using the motion capture data to develop an algorithm which will calibrate the forces applied to the body by the suit.



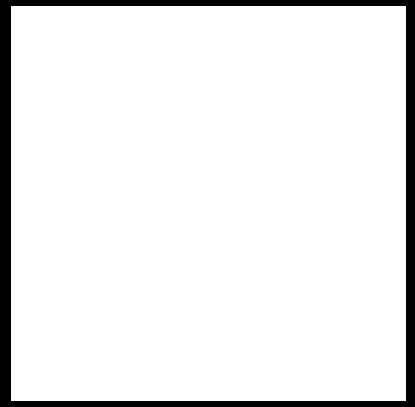


INPUT: Movement Data

OUTPUT: Forces applied by motors

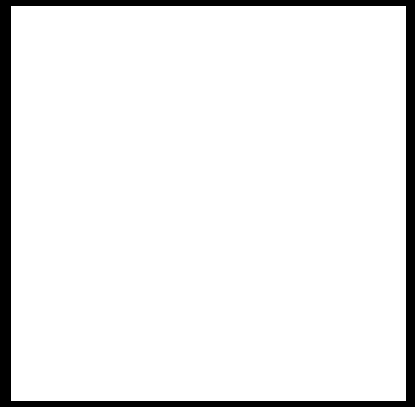


Installation Project



INPUT: Touch & Play

OUTPUT: Sound & Music



Speculate & PLAY

What inputs and outputs might you link together?

There are no wrong answers !

Choose an input and an output

Discuss what system might go in between
& why might this system exist?

Objects to investigate – Choose one input and one output

INPUTS:

TILT SWITCH: https://kitronik.co.uk/collections/e-textiles-conductive-thread/products/2710-electro-fashion-tilt-switch

TEMPERATURE SENSOR: https://kitronik.co.uk/products/4643-lilypad-temp?_pos=3&_sid=f8d115f47&_ss=r

LIGHT SENSOR: https://kitronik.co.uk/products/4641-lilypad-light sensor?_pos=1&_sid=f8d115f47&_ss=r

MOTION SENSOR: https://kitronik.co.uk/products/4633-pir-motion-sensor?_pos=2&_sid=f8d115f47&_ss=r

SOIL MOISTURE SENSOR: https://kitronik.co.uk/products/5647-prong-soil-moisture-sensor-for-bbc-microbit?_pos=12&_sid=f8d115f47&_ss=r

OUTPUTS:

VIBRATING MOTOR: https://kitronik.co.uk/products/2541-minature-3v-vibrating-motor?_pos=4&_sid=578c581dd&_ss=r

SEWABLE BUZZER: https://kitronik..uk/collections/e-textiles-conductive-thread/products/2745-electro-fashion-sewable-buzzer

SEWABLE LED LIGHTS: https://kitronik.co.uk/collections/leds-for-e-textiles

INPUT & OUTPUT PROMPTS

Sound	Texture	Sweat	Sleep	Food waste
Light	Material	Temperature	Image	Textile waste
Colour	Heart Rate	Game	Location	Instagram
Movement	Smell	Virtual Reality	Motors	Tiktok
Position	Touch	Print	Video	
Text	Taste	Emotion	Garment	

Imagine future scenarios for your systems

Could there be any unintended outcomes or by-products?

Group discussion Results

Playful systems designed?

Uses? Implications? Unintended consequences?

Further Material

Code: Processing.org

& The coding train by Daniel Shiffman on Youtube

Etextiles : Sparkfun.com
Kitronic.com

Emma Hamshare | 2024

Ehamshare@fashion.arts.ac.uk

Thoughts ?

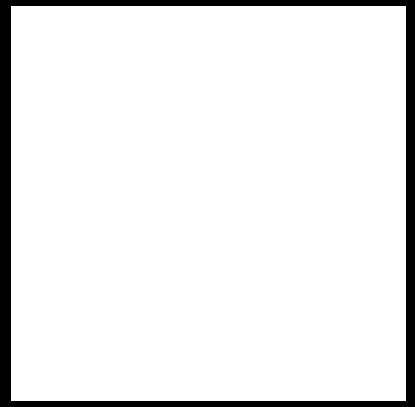
- Anything you're confused or unsure about?
- Tell me what you think
- How do you feel compared to before the lecture?
- Any more confident with approaching technology?
- Feedback on the workshop?

Roundup

- Examples of soft systems
- Developed your own system
- Collaborated

Thoughts ?

- Anything you're confused or unsure about?
- Tell me what you think
- How do you feel compared to before the session?
- Any more confident with approaching technology?
- Feedback on the workshop?



Thank you & well done :)

Email me

Emma.Hamshare@fashion.art.ac.uk

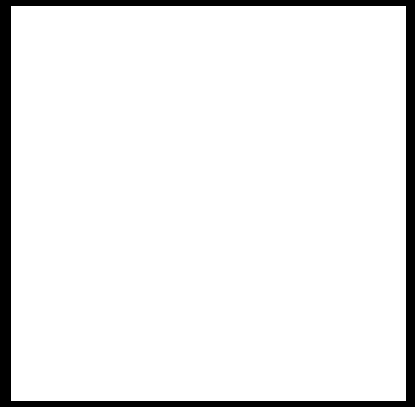


Image references

Finrock, S., 2022. *Input*. [online] BoardGameGeek. Available at: <https://boardgamegek.com/image/409904/input> [Accessed 20 May 2022].

NASA. 2014. *Koichi Wakata Gets a Workout*. [online] Available at: <https://www.nasa.gov/content/koichi-wakata-gets-a-workout-1> [Accessed 12 February 2020].

All other films and images are originals by Emma Hamshare