KOHLER FELLOWS PROGRAM

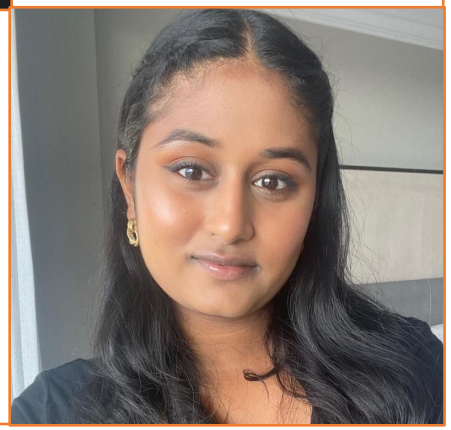
VEDA PATIL & LAUREN GERLOWSKI

BODIES IN MOTION

KOHLER FELLOWS PROGRAM

Lauren Gerlowski
Art Fellow

Veda Patil
Science Fellow



- Intersection of Art & Science
- Created by the Kohler Fellows:
  - **Vaidehi Patil** (PhD Student)
  - **Lauren Gerlowski** (PhD student and choreographer).
- In Collaboration with:
  - **Lucy Pierson**, a dancer based in Chicago, is a key performer in this project.
  - **Kieran Nichols (**PhD student) who is part of the BADGER Lab to use sensor technology.

WEARABLE SENSORS - HEART HEALTH

- **216 million** smart watch users worldwide
- **126.9 million** adults have some form of Cardiovascular Disease in the US alone

Calcific Aortic Valve Disease (CAVD)

- It is irreversible
- Has no treatment
- Affects 25% adults over age 65

GOOD NEWS!

Regular Moderate to Intense physical activity can reduce your risk of heart disease up to 57%!

Statista, 2022; American Heart Association, 2022; PLOS Medicine 2021

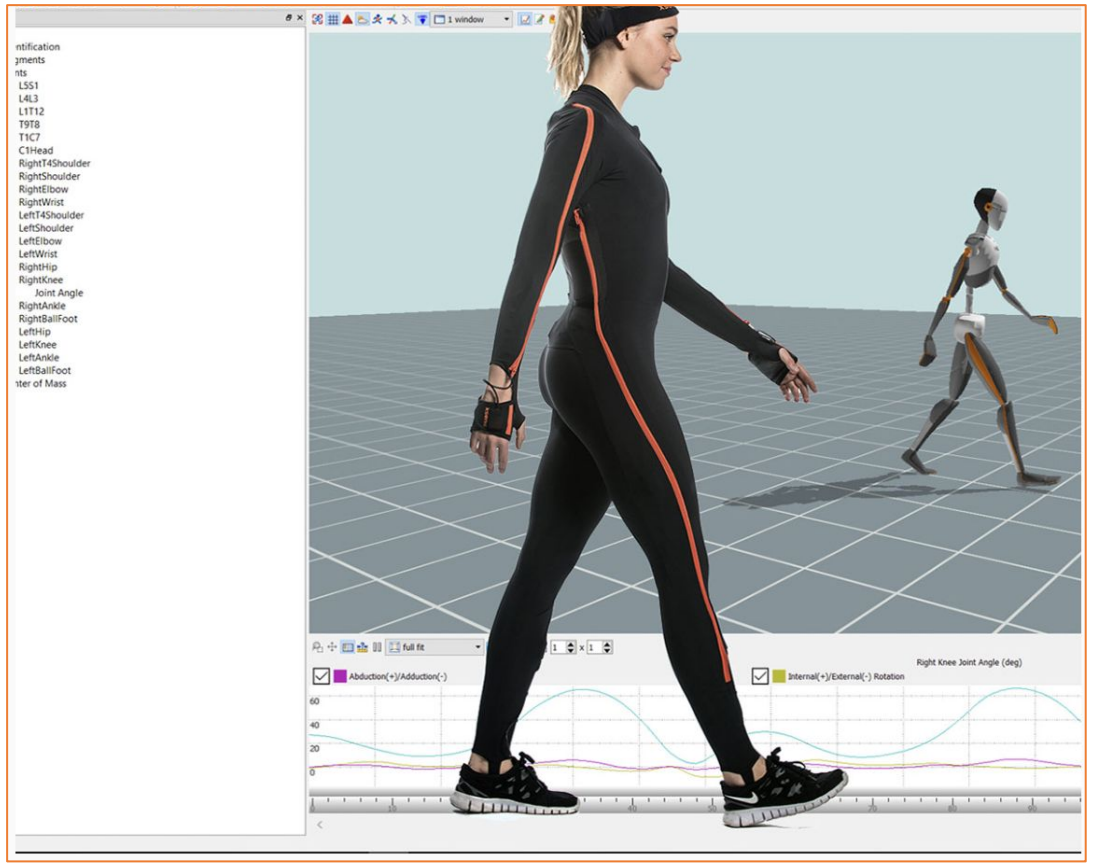
UW BADGER Lab

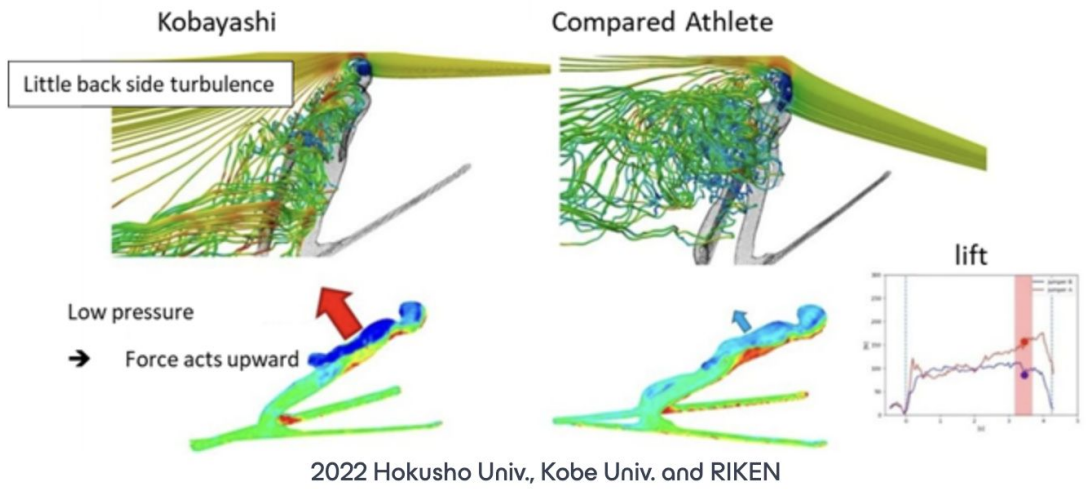
Biomechatronics, Assistive Devices, Gait Engineering & Rehabilitation

COLLABORATION WITH BADGER LAB

Kieran Nichols

- Assessing motor performance after injury
- Designing and testing lower limb prostheses
- Rehabilitation robotics





2022 Hokusho Univ., Kobe Univ. and RIKEN

XSENS SENSOR SUIT

- Inertial Measurement Unit (IMU) sensors
- Ryoyu Kobayashi used data-driven changes determined by XSens data analysis (Hokusho University, Japan) to win gold medal in the Olympics!

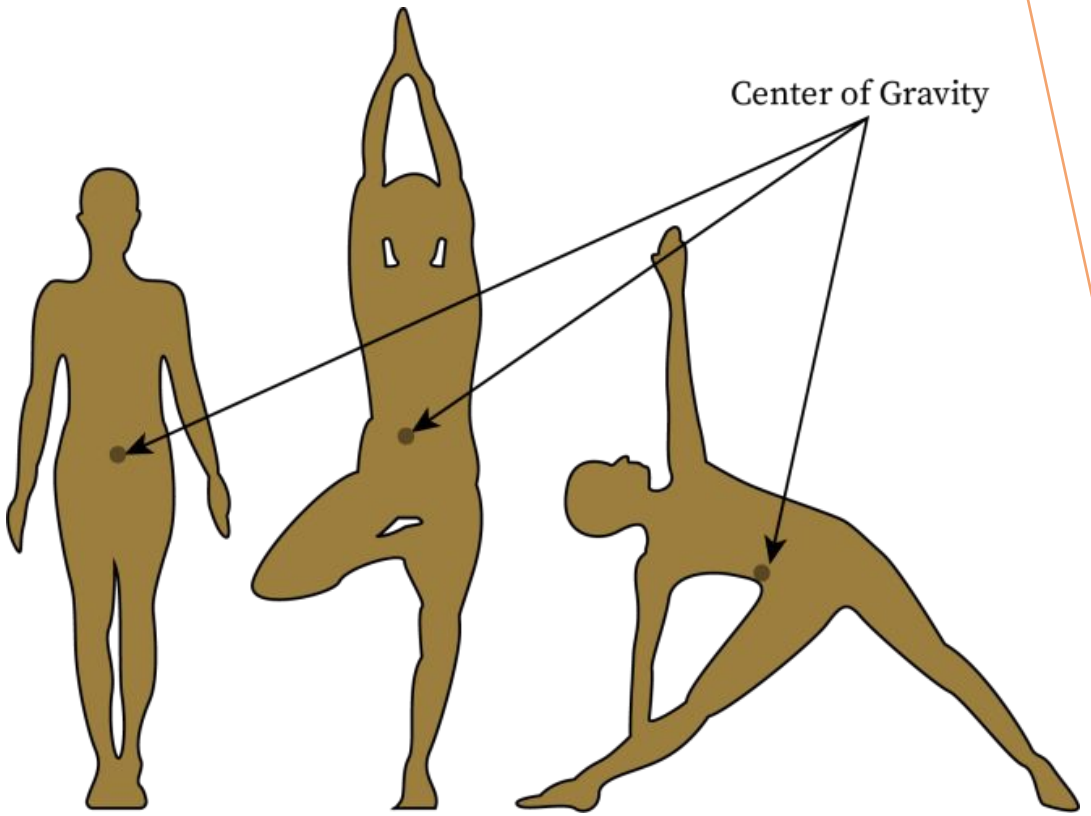
VARIABLES MEASURED BY XSENS

- Centre of Mass

The point at which you can balance an object on your finger – mass is distributed equally about this point.

- Angular Velocity

The time rate at which an object rotates or revolves around an axis

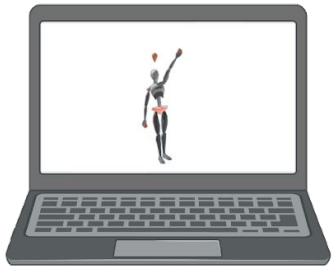


YOUR ASSIGNMENT

As the dancers perform we want YOU to tell us how the lights correspond to the dancer's movements!

- Which colour represents Audience Right?
- Which colour represents Audience Left?
- Any other observations about the light? ...Maybe intensity/brightness?

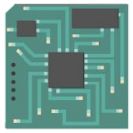
XSens Sensor Suit



Laptop
XSens Motion Capture Software

Transmitted via WiFi

Raspberry Pi Mini Computer for Processing



Center of Mass movement changes translated to light!

SENSOR – LIGHTS COMMUNICATION

KEY TAKEAWAYS

Dance is a universal language.

Interpretation of the dance is up to you!

Encourage multidisciplinary thought

THANK YOU!
Any Questions?

SURVEY

WEBSITE

ANIMATION WITH XSENS VS DANCER - VIDEO