

# **Wearing Sound**

## **Using Max and GitHub to develop and share ideas and code**

**Federico Visi – Udk Berlin**

# Sharing Ideas and Code

# Tools to help us doing that: GitHub and Max

## *overview of the session*

- GitHub: what is it and why should anyone use it?
  - git & and GitHub
  - The Wearing Sound repository: code, wiki, and discussions
    - <https://github.com/federicoVisi/SoundS-gesture-sound-interaction>
  - Basic GitHub vocabulary: clone, push, pull, remote, commit
  - Other GitHub concepts: fork, branch, pull request

# Tools to help us doing that: GitHub and Max

## *overview of the session /2*

- Max: what is it and why should anyone use it?
  - Basic objects: int, float, message, bang, comment.
  - Patching workflow: unlocking and locking the patch.
  - Getting data from Arduino.
  - Mapping sensor data: plotting and sonification.
  - UI elements: toggles, knobs, sliders.
  - Reusing code: encapsulation, abstraction, bpatchers.

# **Wearing Sound**

**Mapping data to sound, control, data.**

**Federico Visi – Udk Berlin**

# Tools to help us doing that: GitHub and Max

## *overview of the session*

- Recap & questions: Max, GitHub access, etc.
- Updated patches: sample trigger and all inputs from Arduino
- Mapping: concepts
- Understanding cross-modality in the digital domain (patch)
- Machine learning for mapping
- Guest lecture: Chicks on Speed



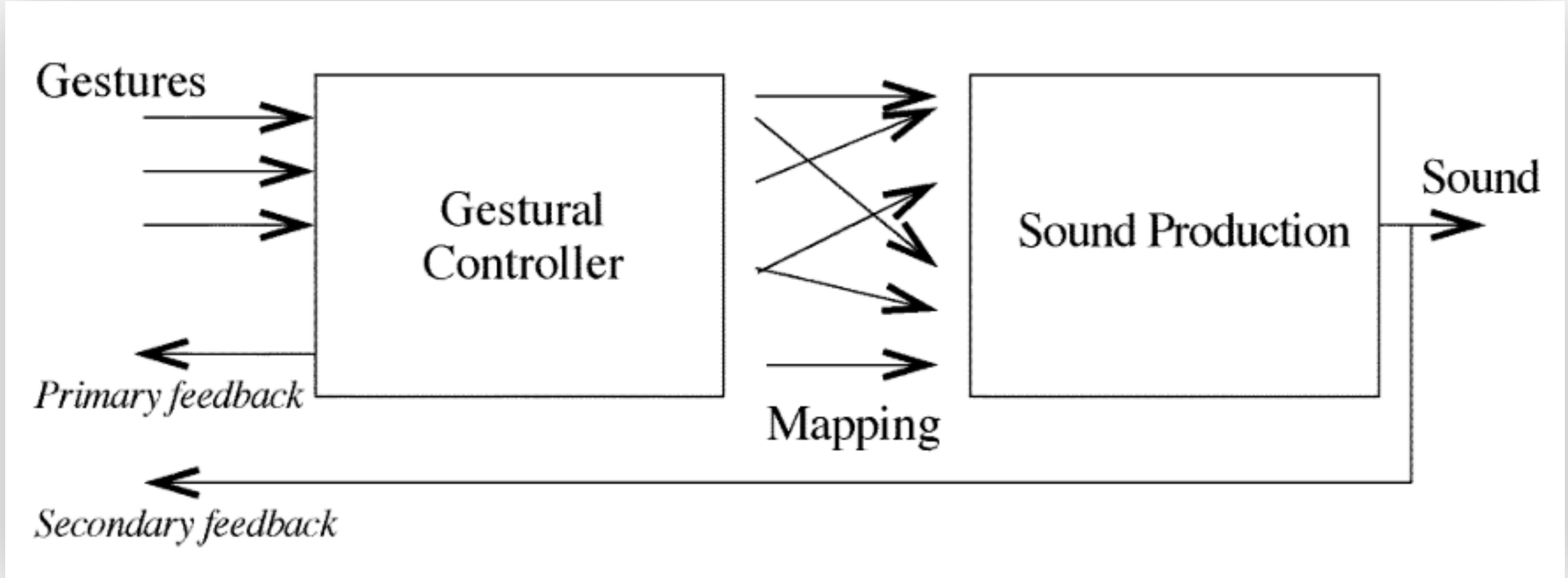
Steim

# Gestural interfaces



See also: E. R. Miranda and M. Wanderley. *New Digital Musical Instruments: Control And Interaction Beyond the Keyboard* (Computer Music and Digital Audio Series). A-R Editions, Inc., Madison, WI, USA, 2006.  
A. R. Jensenius and M. Lyons, Eds., *A NIME Reader: Fifteen years of New Interfaces for Musical Expression*. Berlin, Springer, 2017

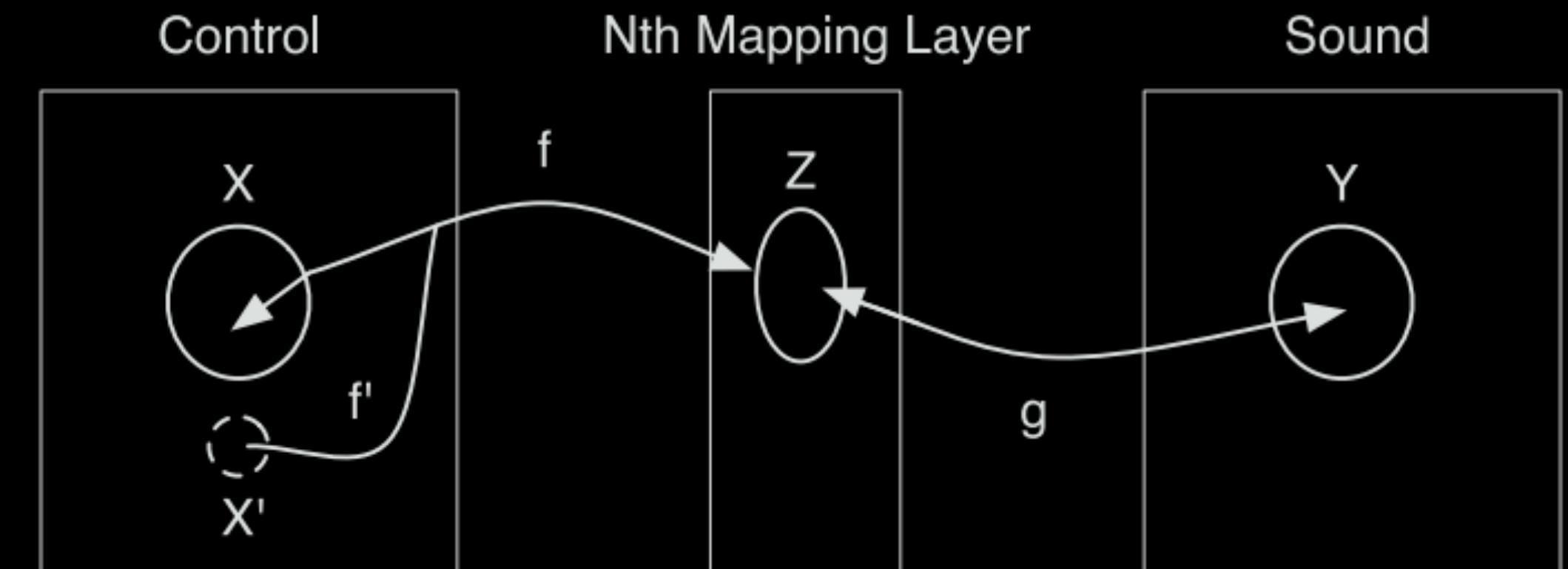
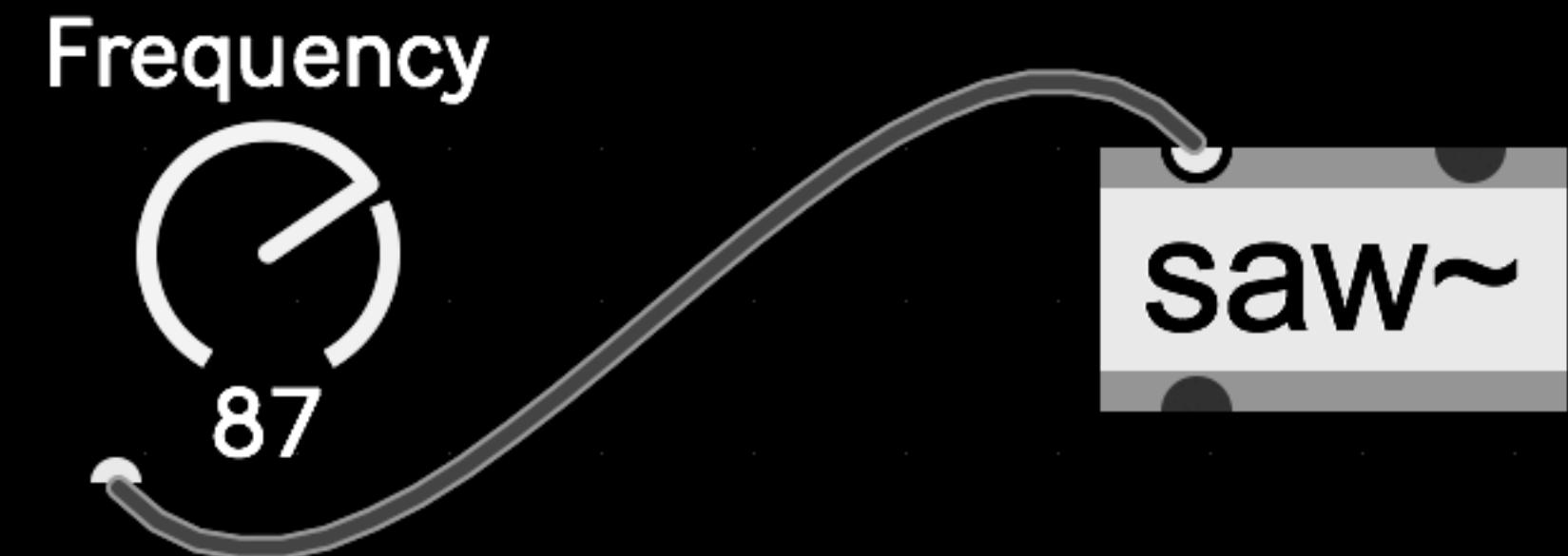
# The Importance of Mapping



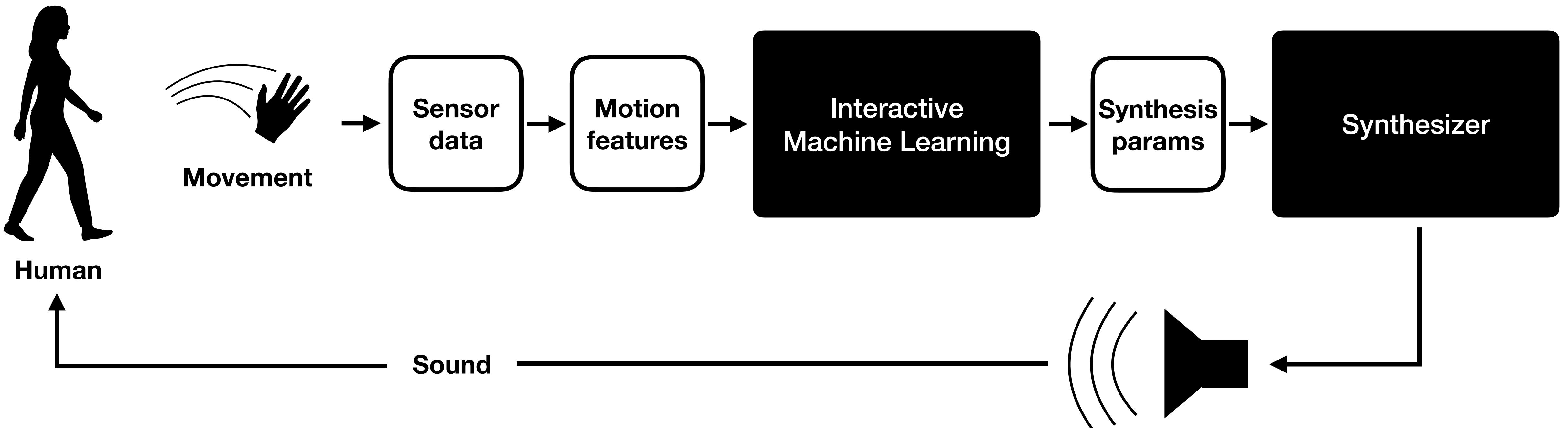
Rovan, J. B., Wanderley, M. M., Dubnov, S., & Depalle, P. (1997). Instrumental Gestural Mapping Strategies as Expressivity Determinants in Computer Music Performance. Kansei-The Technology of Emotion Workshop. Proceedings of the AIMI International Workshop, 68–73.

# Different Kinds of Mapping

- One-to-one (a parameter is mapped explicitly)
- Many-to-many (many parameters are mapped implicitly, e.g. through interpolation of multidimensional parameter spaces)

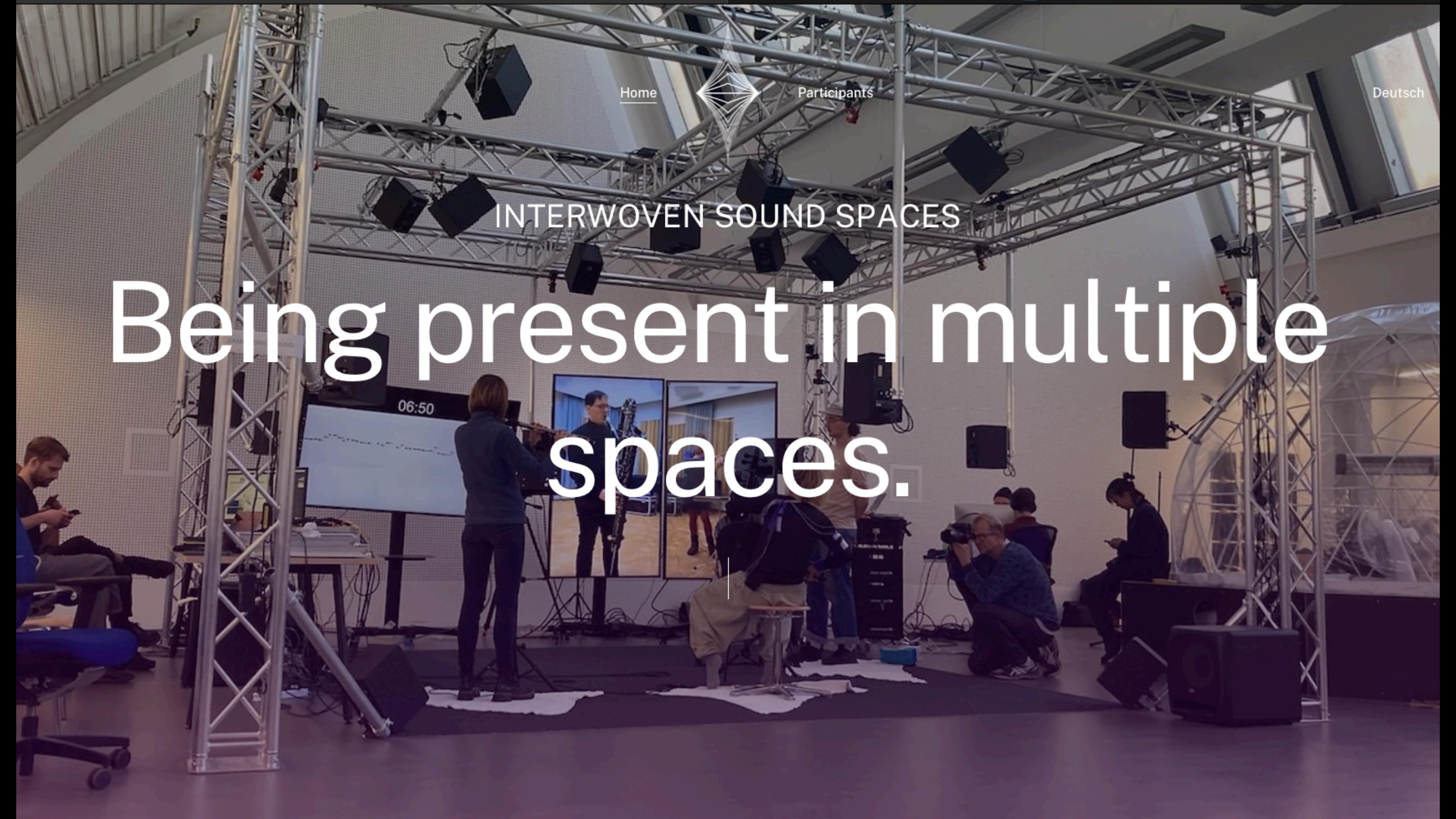


# Interactive Machine Learning Model



# Supervised Learning

- Many algorithms, such as Artificial Neural Networks and Support Vector Machines (SVMs).
- Involves a training phase during which examples are recorded



Home

Participants

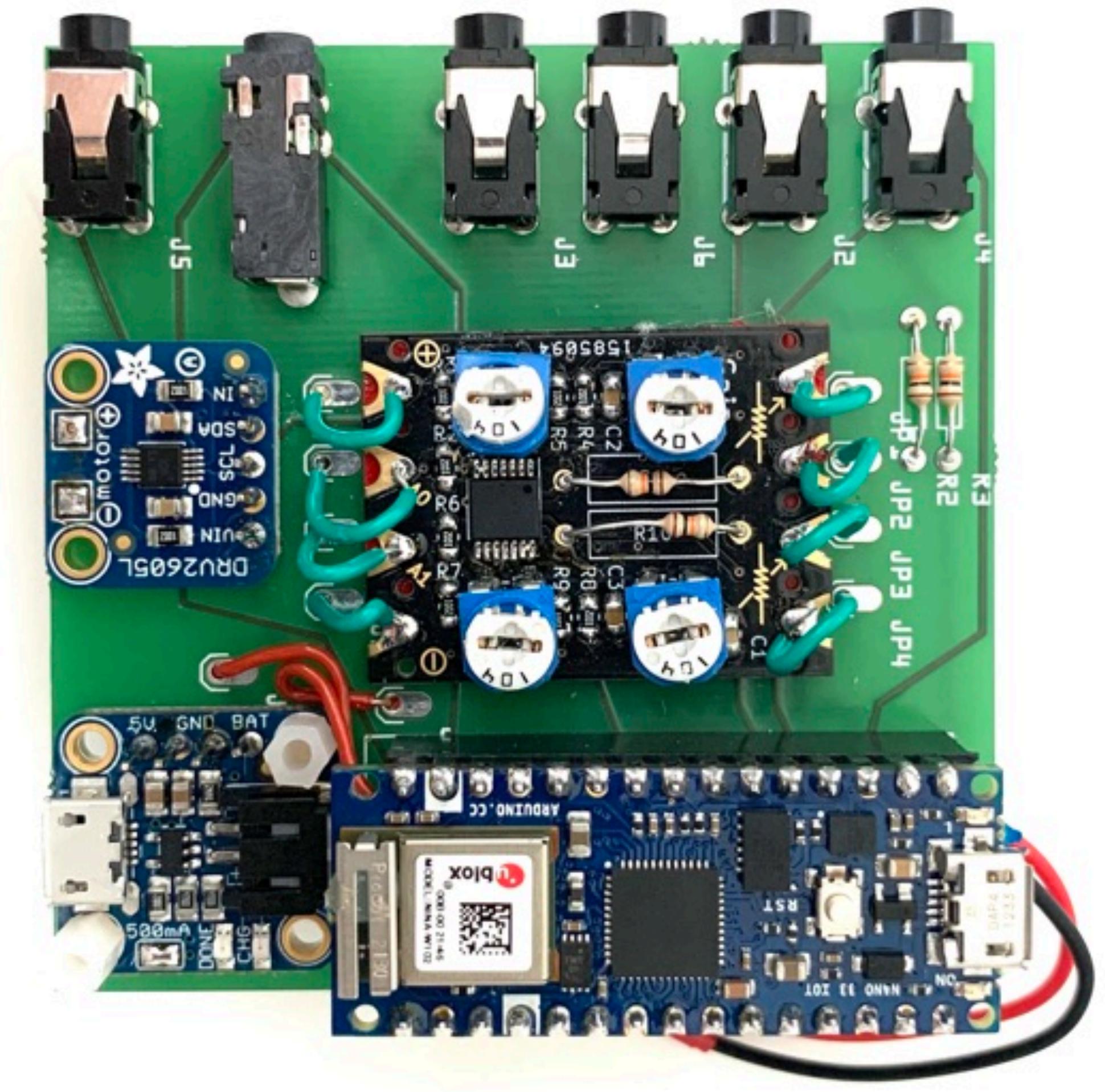
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INTERWOVEN SOUND SPACES

Being present in multiple spaces.









# Practical task

- Think of a gesture you'd like to capture through a textile sensor;
- Think about how this gesture could make or modify sound;
- Try designing this interaction with the hardware and software tools you have.

# Reflections

- Can you describe the gesture/sound relationships?
- What role does the wearable have?