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/wearing_sound
  - 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.

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Tools to help us doing that: GitHub and Max

overview of the session

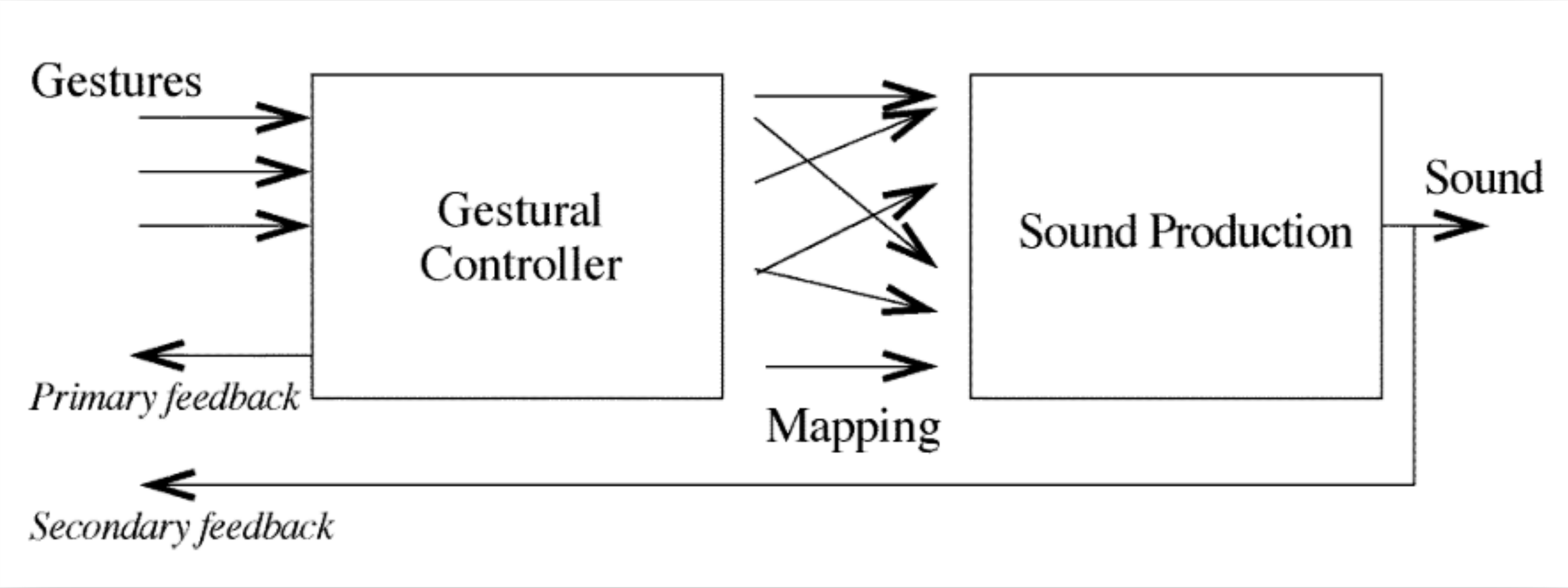
- Recap & questions: Max, GitHub access, etc.
- Updated patches: sample trigger and all inputs from Arduino
- Mapping: concepts
- Understanding cross-modality in the digital domain (patch)
- Machine learning for mapping
- Guest lecture: Chicks on Speed


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

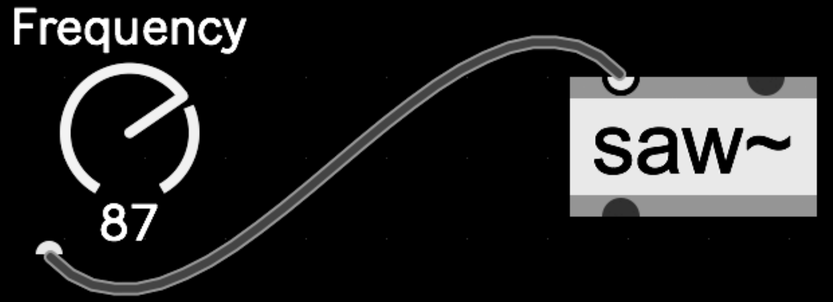
The Importance of Mapping



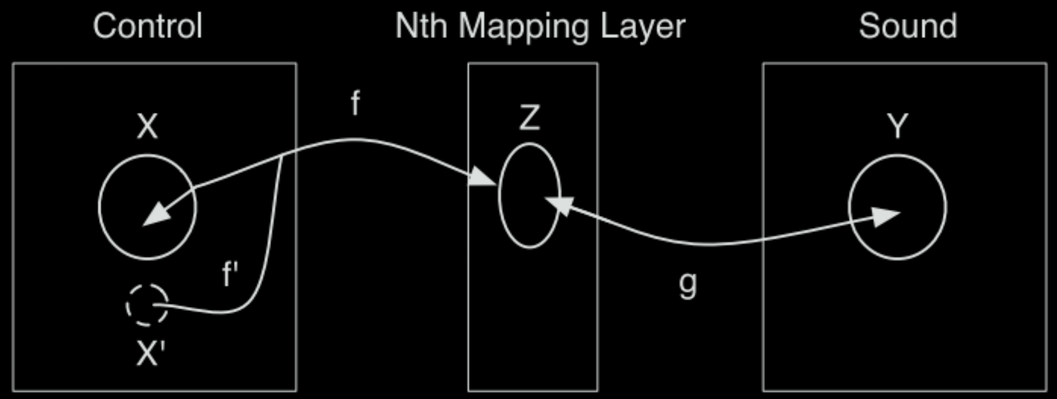
Rovan, J. B., Wanderley, M. M., Dubnov, S., & Depalle, P. (1997). Instrumental Gestural Mapping Strategies as Expressivity Determinants in Computer Music Performance. Kansei-The Technology of Emotion Workshop. Proceedings of the AIMI International Workshop, 68–73.

Different Kinds of Mapping

- One-to-one (a parameter is mapped explicitly)

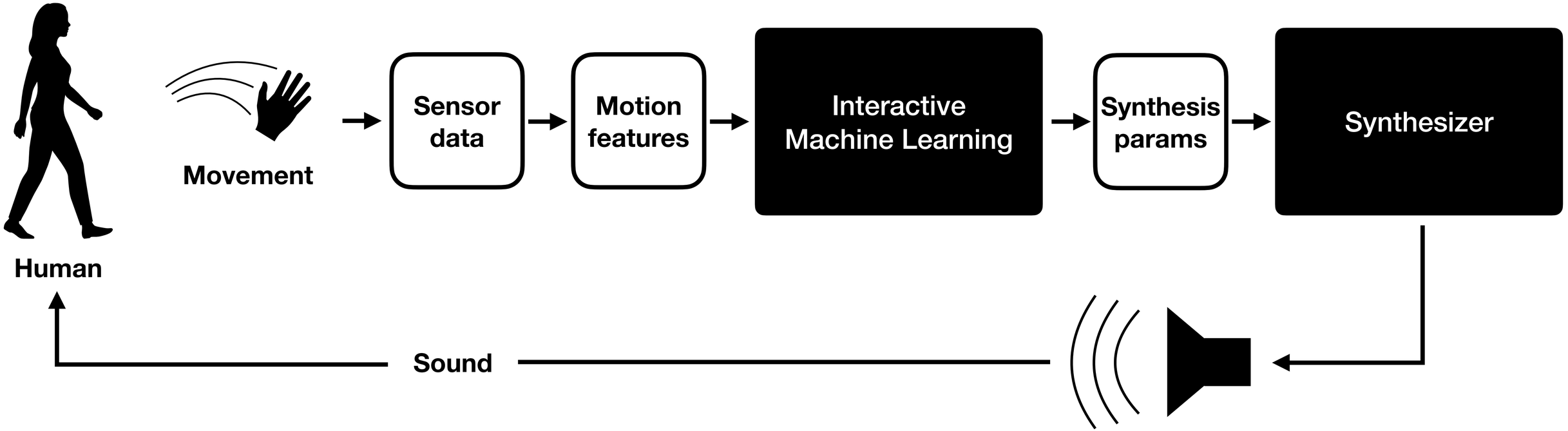


- Many-to-many (many parameters are mapped implicitly, e.g. through interpolation of multidimensional parameter spaces)



Van Nort, D., Wanderley, M. M., & Depalle, P. (2014). Mapping Control Structures for Sound Synthesis. Computer Music Journal, 38(3), 6–22.

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