PARIS LODRON UNIVERSITÄT SALZBURG

DiMo Next
Digital Motion in Sports, Fitness & Well-being

Sonification Toolkit

Design Framework and Toolkit for Real-Time Sonification

Michael Reichmann

michael.reichmann@plus.ac.at

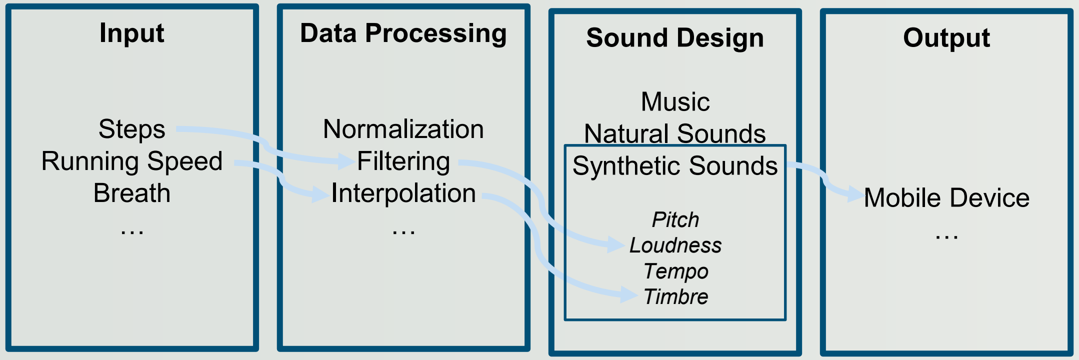
Supervised by:

Alexander Meschtscherjakov

- Movement Sonification
- Real-Time Feedback
- Accessible Sound Design
- Exploratory Prototyping
- Enhanced Sports Experience

Toolkit Structure

The Advanced Sonification Toolkit (AST) turns sensor data into sound by processing movement signals and mapping them to audio parameters.



Structural diagram of the toolkit, illustrating how sensor inputs flow through processing and mapping stages into modular sound engines.

- Built in Max/MSP
- Modular structure with flexible parameter mapping
- Supports real-time and recorded sensor input
- Multiple sound engines

User interface of the AST v1, showing multi-channel data playback alongside the parameter-mapping matrix.

Use Cases

The toolkit is designed for use across different sports and movement contexts by supporting flexible sensor inputs.

- Real-time feedback, e.g., running: cadence, stability, breathing
- Mobile sonification interactions for on-the-move use
- Adaptable to different sensors and sport scenarios
- Applicable in creative and performance contexts, e.g., dance sonification

Gesture-based interaction concept allowing runners to control multiple sonifications while moving.

Dance performance where real-time sensor data controlled sound and visuals.

Contributions

The toolkit makes sonification accessible to non-experts, supporting intuitive understanding of movement without screens.

- Makes sonification accessible to non-experts
- Supports intuitive, screen-free understanding of movement
- Enables rapid, exploratory prototyping