

Kurt Mikolajczyk Curriculum Vitae

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date of birth: 16th December 1990

Education

Doctor of Philosophy: Interaction Design, University of Technology Sydney 2020-2025

Thesis title: [*Designing for Performance and Real-Time Interaction with Media Multiplicities: Collaborative Artwork Creation Using Networked Devices.*](#)

Supervisors: Associate Prof. Samuel Ferguson (primary), Associate Prof. Oliver Bown (co-supervisor), Prof. Linda Candy (external)

Master of Music: Composition (Research), Sydney Conservatorium of Music 2017-18

Thesis title: [*Dynamic Polytemporality*](#)

Supervisors: Dr James Humberstone (primary), Dr Simon Barker (auxiliary)

Graduate Diploma Education (Secondary), Australian Catholic University 2012

Bachelor of Music (Performance), Australian Institute of Music 2009-11

Profile

I am a musician and interaction designer from Sydney, Australia. I play saxophone, clarinet, flute and have worked professionally in the music industry since 2007 performing, composing, improvising, and arranging music across jazz, rnb, electronic, edm, hip hop, and contemporary art styles. Alongside my musical work, I develop interactive art installations and real-time performance systems. I have completed a PhD researching and developing artworks for real-time performance/interaction using networks of single board computers controlling speaker and LED arrays. These and other interactive art systems I have been involved with have been presented and exhibited internationally at conferences such as *ISEA*, *NIME* and *Creativity and Cognition*, with design research I have conducted published in academic journals such as *Leonardo* and *Digital Creativity*. Currently I lecture at The University of Technology Sydney for the subject *Interactive Media*, and perform as a musician and entertainer playing gigs with my wide circle of friends, musicians, and artists in Sydney and abroad.

Academic Publications

Mikolajczyk, K., Har, A.O., Wachsmann, L. Bown, O., Ferguson, S. (2025). Mimetic Possibilities: Collaboration through Movement in Multimedia Opera. *Leonardo* 58 (2) [DOI](#).

Har, A.O., Mikolajczyk, K. (2025). Creating a White Noise Instrument for Collaborative Improvisation. *NIME* [DOI](#).

Mikolajczyk, K., Ferguson, S., Candy, L., Dos Santos, A. D. P., Bown, O. (2024). Space Shaping in the Design Process for Creative Coding: A Case Study in Media Multiplicities. *Digital Creativity* [DOI](#).

Bown, O., Robinson, F., Mikolajczyk, K., & Ferguson, S. (2024). Managing Complexity In Multi-Device Environments. *The Routledge Handbook of Sound Design* [DOI](#).

Mikolajczyk, K., Trolland, S., Ilsar, A., McCormack, J., Ferguson, S. & Bown, O. (2023). Gestural Interactions with Object-Based Audio in an Internet of Sounds Ecosystem. *4th Conference on Internet of Sounds* (Best paper award) [DOI](#).

Mikolajczyk, K., Bown, O., & Ferguson, S. (2023). A Study of Creative Development with an IoT-based Audiovisual System: Creative Strategies and Impacts for System Design. *Creativity and Cognition* [DOI](#).

Bown, O., Mikolajczyk, K., Ferguson, S., & Carey, B. (2022). Buildings as Audio Visual Synthesisers: Experiments Performing Live Music on Wirelessly Networked Multi-Speaker Media Architectures. *ISEA* [URL](#).

Bown, O., Ferguson, S., Dos Santos, A. D. P., & Mikolajczyk, K. (2021). Supporting creative practice in wireless distributed sound installations given technical constraints. *Journal of the Audio Engineering Society*, 69(10) [URL](#).

Bown, O., Ferguson, S., Dos Santos, A. D. P., & Mikolajczyk, K. (2021). Hacking the Medium: Shaping the creative constraints of network architectures in multiplicitous media artworks. *Organised Sound*, 26(3) [DOI](#).

Professional Experience

Interactive Art/Real-time Performance Systems

Renga For White Noise – Austin Oting Har (2024)

Performed at [CNMAT 2024](#) and [ACMC 2024](#), presented at [SEAMUS 2025](#) and [NIME 2025](#)

- Designed a telematic performance system for a white noise composition by Austin Oting Har.
- The system uses an on-the-fly web server to share performance data, updating an AI agent driven by an evolutionary algorithm I developed.
- The AI agent performs in real-time alongside multiple performers who control white noise musical instruments remotely.

Artificial Symbiosis – Anna Savery and Kurt Mikolajczyk

Performed at [Hacking Visual Culture, Sydney 2024](#)

- Designed an audio-visual system to perform a suite of compositions co-written with Anna Savery.
- Each work explored GenAI systems in composition and performance, including DDSF and text-to-audio models.

Rahma Our Creative Feminine – Narjis Mirza (2024)

Exhibited at [Blacktown Arts Centre, Sydney 2023](#)

- Designed a 20 speaker and 40 LED light array that used a bespoke object-based audio engine to spatialise and move recorded lullabies around lights and speakers embedded in fabric.
- Created a performance for the premiere. Two vocalists sang lullabies accompanied by the light and speaker system for which I controlled the position of sound and light objects of in real-time using an Ableton Push.

Gestural Media Mixer – Kurt Mikolajczyk, Sam Trolland, and Caitlin Dubler (2023)

Presented at [Internet of Sounds 2023](#) – Best Paper Award

- Designed tubular enclosures for lights and speakers containing a Raspberry Pi as a reconfigurable spatial audio system.
- Developed a bespoke object-based audio engine that used Bluetooth gestural controllers (AirSticks) to move sound objects through space.

Belief System – Ranters Theatre 2023

Exhibited at [The Substation, Melbourne](#)

- Developed an object-based audio engine for 120 speakers using a network of 60 Raspberry Pi Zero W computers.
- Designed generative behaviours to move sound objects dynamically throughout the space driven by a flocking algorithm as well as data gathered in real-time from a remote weather station.

Speech Bubble Pinball/Jams In The Hueosphere – Oliver Bown (2022)

Exhibited at [107 on the Rocks](#) (2022) and [Casula Powerhouse Arts Centre](#) (2022–23)

- Developed a sound and light system of 100 speakers and 400 LED globes controlled by 50 Raspberry Pi computers assembled into an interactive art installation.
- Designed custom interfaces for both real-time audience interaction and musical performances with the installation.

Mountain Witch – Austin Oting Har (2021)

Filmed at [Casula Powerhouse Arts Centre](#) (2021)

- Reprogrammed an existing interactive artwork (*The Mind at Work*) as a live instrument in an electro-acoustic opera.
- The art installation was controlled in real-time by myself using an Ableton Push in a filmed performance

The Mind at Work – Oliver Bown (2020)

Exhibited at [Casula Powerhouse Arts Centre](#)

- Developed a light-and-sound chandelier using a network of Raspberry Pi computers.
- Developed system for interfacing the network of Raspberry Pis using Ableton Live and generative algorithms.

Jingler – Barnes, C., Chance, A., Mikolajczyk, K. (2017)

Exhibited at [Electrofringe Festival, 107 Projects, Redfern](#)

- Designed an interactive music system where audience members completed a quiz to generate a custom piece of music.
- Implemented mapping between a user interface and system that rendered the audio in Ableton Live.
- Designed a web server that allowed participants to download an MP3 of their personalised composition.

Compositions/Recordings

Brigalow Belt – Kurt Mikolajczyk and Anna Savery (2025)

Exhibited at [MAPMima, Newcastle](#)

- Co-composed with Anna Savery. A composition for violin, saxophone, digital sounds, and field recordings accompanying a short film presented on 360° projection system. The short film was a collection of video footage showcasing the design work of artist/researcher Dr Patricia Flanagan.

War Between Worlds / Ataraxia – Austin Oting Har (2024)

Released on [Neuma records](#)

- Single release of a contemporary electro-acoustic opera I was the recording engineering for in my personal studio.

Dynamic Polytemporality – Kurt Mikolajczyk (2018)

Composed, mixed, and mastered in my [bedroom](#).

- Six works, four for small jazz ensemble and two for laptop as part of my Masters of Music. The music explores having

multiple accelerating and decelerating tempos using mathematical algorithms to synchronise musical layers into points of synchrony.

Respire – Kurt Mikolajczyk (2017)

Performed at [Interplay, City Recital Hall, Sydney](#)

- A composition performed live with interactive visuals developed in MaxMSP about the future relationship humanity will have with Artificial Intelligence. The performance uses an Ableton Live set controlled in real-time with a LeapMotion controller.

JCZYK – Kurt Mikolajczyk (2015)

Performed at [Foundry 616, Sydney, Australia](#)

- Six works for jazz quintet (saxophone, guitar, keyboard, bass and drums) performed as part of the *Jazzgroove* series at Foundry 616.

Research

Research Assistant – UNSW Art & Design for Dr. Patricia Flanagan (2024-2025)

Responsibilities include supporting the establishment of the new Creative Technologies Research Lab (CTRL), including:

- Establishing the lab's identity, setting up physical workspaces, and organising meetings and research retreats
- Creating technical workspaces and configuring high-performance computers for machine-learning tasks.

Research Officer – UNSW Art & Design for Associate Prof. Oliver Bown (2025)

Responsibilities include coordinating design research on the ethics of creative AI, including:

- Helping design and distribute surveys about musicians' perspectives on generative AI technologies.
- Recruiting, organising, and conducting focus groups with high-profile professionals in the music industry.

Technical Skills

Live music performance

Proficient in saxophone, clarinet, flute, electronic music performance, and DJing (Serato).

Music production

Experienced in multi-track recording, editing, and mixing in a personal studio based in Petersham, Sydney. Proficient in programming DSP audio using libraries such as Beads, Minim, and PyAudio, Tone.js, and the Web Audio API. Skilled in developing generative systems for sound and audio, and working with outboard hardware synthesisers, effects, and digital instruments.

Digital media tools

Ableton, Reaper, MaxMSP, Processing, p5js, PureData, TouchDesigner, SuperCollider, Adobe Illustrator, Adobe Premiere Pro, Microsoft Office, LibreOffice/OpenOffice, and machine-learning-based audio generation tools such as Magenta.

Software development

Git/GitHub; Java, JavaScript, Python, and C# (Unity); JetBrains IDEs (IntelliJ, PyCharm) and Visual Studio Code (JavaScript). Experienced with command-line interfaces and shell scripting (Bash, Command Prompt, PowerShell, Terminal), low-level audio and media frameworks for digital signal routing and real-time audio streaming (FFmpeg, ASIO, JACK, VLC, ALSA/PulseAudio), data visualisation, and API integration.

Networking

Experienced with OSC and MIDI communication for networked musical systems, and with standard networking and streaming protocols including TCP/UDP, RTP, HTTP, WebSockets, and tunnelling with NGrok. Skilled in router configuration and LAN setup.

Operating systems

Proficient with macOS, Windows 10/11, and Linux distributions (Debian and Arch). Experienced in working with Raspberry Pi, Arduino, and other single-board computers for sensor and hardware integration using I²C, serial, Bluetooth, Zigbee, and Wi-Fi communication. Skilled in building PCs and configuring computer and audio hardware.

Teaching

University of Technology Sydney (2020–ongoing)

- *Lecturer* (2023–), *Tutor* (2020–), *Curriculum Development* (2023) for **Interactive Media**
- *Tutor* for **Prototyping Physical Interaction** (2020–2024)
- *Tutor* for **Fundamentals of Interaction Design** (2023)
- *Tutor* for **Digital Experience Design Studio** (2024)
- Subjects taught are at undergraduate and postgraduate levels teaching in programming and multimedia design, with an emphasis on digital audio, creative coding, user interfaces, web technologies, and single-board computers with sensor integration.

University of New South Wales (2021)

- *Lecturer/Tutor* for **Interactive Art (DART1250)**

University of Sydney (2019 – 2020)

- *Coordinator and Lecturer* for **OLET1803: Digital Communication: Sound**