Daniel Manz

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Introduction

Research-practitioner specialising in ML-based audio synthesis, instrument fabrication and human-AI interaction. Seeking to empower artists in a time of rapidly developing AI technology, leveraging unorthodox applications of generative models and user-centred design methodologies.

Education

MSc Computing and Creative Industry, Distinction, University of Arts London   Sept 2023 - Dec 2024

Embedding neural audio synthesis model onto standalone instrument for dissertation, exposing internal network architecture to the user. Executed full prototyping & development cycle including CAD, electronic circuit fabrication and conducting robust user-testing.

BSc Physics and Computer Science, 2:1, University of Groningen, NL   Sept 2018 - Jun 2021

Dissertation focused on introduction of ML models for improved electron detection at the LHCb experiment, CERN. Executed cycle of ML development, including feature engineering, hyperparameter tuning and explainability.

A - Levels, Bishop Vesey Sixth Form, Birmingham, UK   Sept 2016 - Aug 2018

Maths, German A* | Physics A | Further Maths B

Experience

ML Engineer, University for the Creative Arts   March 2024 - Present

- Design and develop ML architecture, creatively reimagining women's representation in advertising
- Deploy and configure scalable image annotation system
- Comprehensive analysis of foundational models for image generation, amplifying 'glitches'
- Implementation of frontend interfaces for AI model interaction

Associate Lecturer, UAL Creative Computing Institute   March 2024 - Present

- Module: Exploring Machine Intelligence [MSc level-7]
- Prepare and deliver lectures on AI and its creative applications, including critical engagement
- Guide students through technical problem solving processes
- Assess student work according to departmental standards

ML Engineer, Pollen Audio, London   Dec 2024 - Present

- Design and develop ML architecture tailored for audio processing tasks
- Curating and managing high-quality datasets
- Optimising model performance for accuracy and efficiency
- Integrating solutions into user friendly interfaces
- Close collaboration with cross-functional teams, ensuring seamless alignment with broader project goals

Audio Development Engineer, Pollen Audio, London   Jan 2024 - Sept 2024

- Developed vehicle motion sonification system from PoC to production using Max/MSP & Python
- Delivered client-ready demonstrations for automotive industry stakeholders
- Engineered standalone executable application, implementing rapid prototyping methodology for hardware/software integration

Software Engineer/Sound Design, Erika Tan, Tate Modern, London   Jun 2024 - Oct 2024

- Working closely with artist Erika Tan, developed archival sonification schema in Pure Data displayed at the Museum X Machine X Me conference
- Engineered ML audio synthesis model, real-time latent space exploration, integrating custom granular synthesis algorithm.
- Designed and deployed multi-channel speaker configuration for exhibition space

Student Technician, UAL Creative Computing Institute   May 2024

- Lead student technician for MSc Creative Computing (Modular) students for the senseScape exhibition, Eagle Wharf.
- Providing/installing projectors, sensors and speakers for student works
- Real-time problem solving and managing student relationships & expectations

Conference Proceedings

- **Daniel Manz**, Mick Grierson, *Brave: Designing an Embedded Network-Bending Instrument, Manifesting Output Diversity in Neural Audio Systems.* In Proceedings of the 16th International Conference on Computational Creativity (ICCC'25). Campinas, Brazil, July 2025. [accepted]

Skills

Core Software Engineering	Python, JavaScript, C/C++ Version control methodologies, Git and collaborative workflows Data analysis and visualisation, using pandas, matplotlib & seaborn Cloud deployment & production systems
Machine Learning	Frameworks: PyTorch & libtorch C++ Cloud-based training and deployment Embedding model on stand-alone device Configure and deploy scalable data annotation systems
Audio Programming & DSP	Interaction design in Max/MSP & Pure Data AI music models: diffusion, VAEs, transformer-based architectures Spatial audio programming using ambisonic schema Audio analysis: Librosa, Essentia Production tools: Ableton, Reaper
Physical Computing & HCI	Arduino-based interaction design with sensor integration Electronic circuit fabrication: breadboarding, soldering & PCB manufacture CAD design in Fusion 360 & 3D printing
Languages	Fluent in both English & German Proficient in Dutch