

Emmanouil Theofanis Chourdakis

Electronic Engineer (Dipl.-Ing, MSc, PhD) – Audio / DSP / Machine Learning

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Professional Summary

Senior Machine Learning Engineer with deep expertise in generative audio models and production ML systems. Combines strong deep learning foundations (generative models, ControlNet, LoRA) with full-stack engineering skills to build and optimize end-to-end audio generation pipelines. Experienced in training custom models from scratch, implementing inference optimization, and deploying ML systems that scale. Track record of shipping production features and contributing to award-winning products.

Industry Experience

Senior Machine Learning Engineer | Epidemic Sound

Stockholm, Sweden | Apr. 2024 - Present

- Developed and trained from scratch in-house **Generative Audio** models for track remixing
- Developed **ControlNet** and **LoRA** finetuning for audio generation control, achieving dynamics control and stem conditioning
- Main contributor for the **Adapt** generative model inference python library which achieves infinite-length multi-stem adaptation with constant memory complexity and inference time of a few seconds
- Optimized Adapt's length adaptation engine, reducing processing time from 2 minutes to sub-second latency
- Supervised MSc projects and mentored colleagues on Machine Learning for Audio
- Gave a well-received talk to **Stockholm AI** on generative models for audio

Audio Research Engineer | Nomono

Trondheim, Norway | Feb. 2021 - Mar. 2024

- Contributed algorithms for their automatic EQ performing radio-voice timbre shaping and detecting/equalizing room modes and artifacts
- Led next-gen audio export (**Dolby Atmos**, Facebook 360, MPEG-H)
- Conducted subjective evaluation experiments for speech enhancement
- Managed Research Council of Norway funded projects (reporting, administration), mentored colleagues, two patent filings
- Published papers at AES Convention and interviewed for an article on the future of AI in podcasting
- Contributed to **Audiomentations**, a widely-used open-source audio augmentation library for ML
- Contributed ambisonics and lavalier mic recording software in Go for their Sound Capsule
- **Contributed to SXSW Innovation Award-winning product**

Research Intern | BBC Audio R&D

London, UK | Dec. 2018 - Apr. 2019

- Implemented **object rendering** for hard of hearing as VST/AAX/Web plugin (Faust, C++, JS, Juce)
- Published paper on **probabilistic programming** and **ML** automation

Education

PhD in Computer Science | Queen Mary University of London

London, UK | April 2020

- Thesis: **Natural Language Understanding and Generation** for radio drama production assistance

MSc in Digital Music Processing | Queen Mary University of London

London, UK | September 2014 | Graduated with distinction (80/100)

- Thesis: **ML** for multitrack reverberation (Michael Clark Prize winner)

Electronic and Computer Engineering Diploma | Technical University of Crete

Chania, Greece | July 2011 | Graduated with mark "Very Good" (7.46/10)

- Thesis: Inductive logic programming for musical composition

Key Skills

Main Interests: Deep learning for Audio, Generative ML, Audio DSP

Machine Learning: Apache Beam / Dataflow, Dask, Pytorch, NumPy, Scikit-Learn, Pandas, BigQuery, Huggingface

Programming: Python, Matlab, C, C++, Juce, Faust, Go, Linux, Git, Docker, Atlassian, LaTeX

Cloud: AWS, Google Cloud, Modal

Languages: English (TOEFL, 6+ yrs London), Norwegian (A1), Greek (native)

Work Samples

See github.com/mmxgn for repositories

- **Prompt Rewriting System** – Ollama-based prompt rewriter to avoid latent collapse in text-to-music generation
- **Interactive Novel/TTRPG Engine** – LLM-powered story teller with battle system, memories, NPCs with hidden agendas
- **Godot Game Engine Demos** – Several game prototypes and interactive demos
- **PyopenAL-HRTF** – Binaural audio for PyopenAL
- **Genre-Recognition** – Musical genre ML classifier
- **Audio-Dafx2019 (BBC)** – ML audio categorization, hard of hearing
- **SimScene.py** – Virtual sound environments
- **Smooth-Convex-KL-NMF** – Speaker diarization
- **Audiomentations** – Audio augmentation for ML
- **ClauCy** – Spacy info extraction
- **Other** – Open-source audio work as well as side projects (ask!)

Patents

- **E. Chourdakis** – Method for processing an audio signal. *WO Patent WO2023170283A1 (2023) / US Patent App. 18/846,148 (2025)*
- **E. Chourdakis, I. Jordal** – Methods for processing an audio signal and computer system. *EP Patent EP4099324A1, 2022*

Publications

Thesis:

- **E.T. Chourdakis** – Computational Methods for Assisting Radio Drama Production. *PhD Thesis, Queen Mary University of London, 2021*
- **E.T. Chourdakis** – Intelligent Application of Artificial Reverberation to Multi-track Mixes. *MSc Thesis, Queen Mary University of London, 2014*
- **E.T. Chourdakis** – Computer aided music composition using Inductive Logic Programming. *Diploma Thesis, Technical University of Crete, 2011*

Peer-reviewed papers:

- **E.T. Chourdakis, J.D. Reiss** – A machine-learning approach to application of intelligent artificial reverberation. *Journal of the AES, 2017*
- **E.T. Chourdakis, J.D. Reiss** – Automatic control of a digital reverberation effect using hybrid models. *AES 60th Conference: DREAMS, 2016*
- **E.T. Chourdakis, L. Ward, M. Paradis, J.D. Reiss** – Modelling experts' decisions on assigning narrative importances of objects in a radio drama mix. *DAFx, 2019*
- **E.T. Chourdakis, J. Reiss** – Constructing narrative using a generative model and continuous action policies. *CC-NLG, 2017*
- **E.T. Chourdakis, J.D. Reiss** – Grammar Informed Sound Effect Retrieval for Soundscape Generation. *DMRN+13, 2018*
- **E.T. Chourdakis, J.D. Reiss** – Tagging and retrieval of room impulse responses using semantic word vectors and perceptual measures of reverberation. *AES Convention 146, 2019*
- **E.T. Chourdakis, J.D. Reiss** – From my Pen to your Ears: Automatic Production of Radio Plays from Unstructured Story Text. *SMC, 2018*
- **B. Shirley, L. Ward, E.T. Chourdakis** – Personalization of Object-based Audio for Accessibility using Narrative Importance. *2019*
- **C. Angonin, E.T. Chourdakis, R.A. Åeng** – Assessing the relevance of perceptually driven objective metrics in the presence of handling noise. *AES Convention 152, 2022*
- **I. Jordal, A. Tamazian, E. Chourdakis, C. Angonin** – Audiomentations: A Python Library for Audio Data Augmentation. *2019*