

Matteo Pettenò



PROFILE

I am an engineer with a strong foundation in information theory from my Bachelor's at the University of Padova and a deep passion for audio, which led me to a Master's in Music and Acoustic Engineering at Politecnico di Milano. I gained expertise in deep learning, signal processing, and electronics and worked professionally as a full-stack developer, software architect, and DevOps engineer. In September 2025, I will begin a Marie Skłodowska-Curie PhD with a focus on Privacy for Smart Speech Technology, jointly hosted by EURECOM and Ruhr-Universität Bochum. During my PhD, I am actively seeking research or industrial internship opportunities in related fields.

SKILLS

- Python, C++, MATLAB, GLSL, JAVA, SQL, JS, CSS
- Keras, Tensorflow, PyTorch
- NumPy, SciPy, scikit-learn
- Apache Beam, Apache Airflow, Apache Spark
- GCP, AWS, CI/CD, Docker, LXC, Proxmox
- Tone.js, Three.js, Svelte, Vue.js, Firebase, Flask, Spring, PWA, Workbox, Hugo
- JUCE, Supercollider
- librosa, FMP Notebooks
- Logic Pro, Ableton Live, Reaper, Ardour
- COMSOL, REW
- gdb, OWASP ZAP, ghidra
- Figma

EDUCATION

Ph.D. Candidate in PSST (Marie Curie Fellow)

Digital Security Department, EURECOM
IKA, Ruhr-Universität Bochum (RUB)

Starting 09/2025 - Expected 2029
Sophia Antipolis, France
Bochum, Germany

- *Privacy for Smart Speech Technology* (PSST) joint doctoral training programme
- Funded by Horizon Europe Marie Skłodowska-Curie Action
- 19 months at EURECOM, 6-months secondment at Orange and 26 months at RUB
- **Research focus:** Disentangled representations for selective attribute suppression

Master's Degree in Music and Acoustic Engineering

DEIB, Politecnico di Milano (PoliMi) - *Graduated Cum Laude*

09/2021 - 10/2024
Milan, Italy

- **Relevant Courses:** Machine Learning, Computer Music, Sound Analysis Synthesis and Processing, Creative Programming and Computing, Musical Acoustics, Electronics and Electroacoustics, Computer Security
- **Thesis:** *Latent Space Regularization via Normalizing Attribute Transformations for Symbolic Music Generation*

Bachelor's Degree in Information Engineering

DEI, University of Padua (UNIPD)

09/2013 - 07/2021
Padua, Italy

- **Relevant Courses:** Algorithms for Engineering, Systems and Models, Control systems, Electronics, Telecommunications
- **Thesis:** *Evaluation of the performance of commercial STT and NER services applied to digitized oral sources*
- **Note:** Suspension of studies from 2016 to 2019.

PUBLICATIONS

M. Pettenò, A. I. Mezza and A. Bernardini, Conditional Diffusion as Latent Constraints for Unconditional Symbolic Music Generation Models, Under review at *26th Conference of the International Society for Music Information Retrieval (ISMIR)*, 2025

M. Pettenò, A. I. Mezza and A. Bernardini, On the Joint Minimization of Regularization Loss Functions in Deep Variational Bayesian Methods for Attribute-Controlled Symbolic Music Generation, Under review at *33rd European Signal Processing Conference (EUSIPCO)*, 2025

R. B. Luzietti et. al, FONTI 4.0: Evaluating Speech-to-Text Automatic Transcription of Digitized Historical Oral Sources. *Proceedings of the Eighth Italian Conference on Computational Linguistics CliC-it*, 2021

WORK EXPERIENCE

Full Stack Developer

ccelera s.r.l (Arsenalia Group) - Via Lepetit, 8, 20124

11/2021 - 08/2023
Milan, Italy

- **Platforms:** SAP Hybris Commerce
- **Customers:** Bonfiglioli, Cellularline, PegPerego, Metal Work

DevOps Engineer

Walit s.r.l - Via Dandolo, 25/B, 31100

09/2019 - 02/2021
Treviso, Italy

- **Platforms:** Google Cloud Platform (GCP), Gitlab, Flask, OWASP ZAP

System Integration Engineer

Alpenite Ltd - 38 Craven Street, WC2N 5NG

01/2019 - 07/2019
London, UK

- **Platforms:** Mulesoft, RabbitMQ, FTP
- **Customers:** Stella McCartney

Full Stack Developer

Alpenite s.r.l (Arsenalia Group) - Via delle Industrie, 27/7, 30175

01/2017 - 01/2019
Venice, Italy

- **Platforms:** SAP Hybris Commerce
- **Customers:** Kering Eyewear

RESEARCH INTERESTS

- Deep Learning
- Representation Learning
- Speech Processing
- Privacy Preservation
- Speaker Anonymization
- Deepfake Detection
- Music Information Retrieval
- Audio Generation
- AI-Assisted Music Composition
- Music Understanding
- Hearing Aids

LANGUAGES

Italian: Mother tongue

English: Fluent (C1)

French: Base (A1)

MUSICAL BACKGROUND

As a self-taught multi instrumentalist, I have a well-rounded skill set across guitar, piano, and drums, while not being a virtuoso in any of them. My passion for synthesizers has always been a major influence, and listening across genres has enriched my understanding of music. I have experience playing in bands, which has further developed my collaborative skills. Additionally, I have a solid background in music theory, which I have developed independently over the years through my playing and further strengthened through courses in my master's degree.

RESEARCH PROJECTS

Conditional Diffusion as Latent Constraints for Unconditional Symbolic Music Generation Models 2025

Paper submitted to 26th Conference of the ISMIR

[github](#)

Keywords: symbolic music, attribute-controlled generation, diffusion models, latent constraints

On the Joint Minimization of Regularization Loss Functions in Deep Variational Bayesian Methods for Attribute-Controlled Symbolic Music Generation 2025

Paper submitted to 33rd EUSIPCO

[github](#)

Keywords: symbolic music, attribute-controlled generation, power transforms

Do Unconditional Deep Generative Models Spontaneously Learn How to Encode Human-Interpretable Musical Attributes? 2023

Music and Acoustics Engineering Capstone course in MS.

[github](#)

Keywords: variational autoencoders, latent space topological structure

Evaluation of the performance of commercial STT and NER services applied to digitized oral sources 2021

Thesis in Information Engineering BS

[github](#)

Keywords: speech-to-text, named-entity-recognition, gcp, aws

CREATIVE & COMPUTER MUSIC PROJECTS

Ego 2023

Creative Programming & Computing course in MS

[github](#)

Keywords: three.js, glsl, svelte, mediapipe, max4live, tone.js

Pulseq - Fractal Sequencer 2022

Advanced Coding Tools and Methodologies course in MS

[github](#)

Keywords: fractal sequencer, web app, svelte, tone.js, glsl

OranJam - JUCE 2022

Computer Music Languages and Systems course in MS

[github](#)

Keywords: juce, c++, cmake

HarMMMLonizer - Supercollider 2022

Computer Music Languages and Systems course in MS

[github](#)

Keywords: supercollider, harmonizer, delay lines, crosstalk delay feedback

ACOUSTICS PROJECTS

Design of a Piano 2023

Musical Acoustics: Characterization of Musical Instruments course in MS

[report](#)

Keywords: applied acoustics, comsol, matlab, piano modeling

Wave Digital Filter Modeling 2022

Sound Synthesis and Spatial Processing course in MS

[report](#)

Keywords: wdf, matlab, virtual analog

Acoustic Source Localization with Microphone Array 2022

Digital Audio Analysis and Processing course in MS

[report](#)

Keywords: sound localization, doa estimation, matlab, microphone arrays

RIR Estimation with Wiener Filters 2022

Digital Audio Analysis and Processing course in MS

[report](#)

Keywords: room impulse response, wiener filter, matlab, convolution