

Matteo Pettenò



PROFILE

I am engineer with a strong background in information theory and my passion for music led me to obtain a degree in Music and Acoustic Engineering. Throughout my education, I have developed knowledge in machine learning, system and control theory, signal processing and electronics. I have always managed to combine my academic career with my professional development, working as a consultant in the IT sector in the role of full-stack developer, software architect and DevOps engineer. For this reason, I consider myself a determined person who works hard to achieve the goals he has set for himself. I'm seeking a role in the context of AI as a machine learning or data engineer that allows me to enhance my skills in this exciting 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, Flask, Spring, PWA, Workbox, Hugo
- JUCE, Supercollider
- librosa, FMP Notebooks
- Logic Pro, Ableton Live, Reaper, Ardour
- COMSOL, REW
- gdb, OWASP ZAP, ghidra
- Figma

LANGUAGES

Italian: Mother tongue

English: Fluent (C1)

French: Base (A1)

EDUCATION

Master's Degree in Music and Acoustic Engineering

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

2021 - 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)

2019 - 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*

PUBLICATIONS

M. Pettenò, A. I. Mezza and A. Bernardini, Latent Space Regularization..., *Forthcoming*, 2025

WORK EXPERIENCE

Senior Consultant - Full Stack Developer

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

2021 - 2023

Milan, Italy

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

DevOps/System Administrator

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

2020 - 2021

Treviso, Italy

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

Senior Consultant - Junior Software Architect

Alpenite Ltd - 38 Craven Street, WC2N 5NG

2019

London, UK

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

Junior Consultant - Full Stack Developer

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

2017 - 2018

Venice, Italy

- Platforms: SAP Hybris Commerce
- Customers: Kering Eyewear

RESEARCH PROJECTS

Latent Space Regularization via Normalizing Attribute Transformations for Symbolic Music Generation

Thesis in Music and Acoustic Engineering MS

2024

[github](#)

Keywords: symbolic music, attribute-controlled generation, data gaussianization

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

Music and Acoustics Engineering Capstone course in MS.

2023

[github](#)

Keywords: variational autoencoders, latent space topological structure

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

Thesis in Information Engineering BS

2021

[github](#)

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

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.

CREATIVE PROJECTS

Ego	2023
<i>Creative Programming & Computing course in MS</i>	github
<u>Keywords:</u> three.js, glsl, svelte, mediapipe, max4live, tone.js	
Pulseq - Fractal Sequencer	2022
<i>Advanced Coding Tools and Methodologies course in MS</i>	github
<u>Keywords:</u> fractal sequencer, web app, svelte, tone.js, glsl	

COMPUTER MUSIC PROJECTS

Padder - Computer Music System	2022
<i>Computer Music Languages and Systems course in MS</i>	github
<u>Keywords:</u> arduino, touchosc, supercollider, processing	
OranJam - JUCE	2022
<i>Computer Music Languages and Systems course in MS</i>	github
<u>Keywords:</u> juce, c++, cmake	
HarMMMLonizer - Supercollider	2022
<i>Computer Music Languages and Systems course in MS</i>	github
<u>Keywords:</u> supercollider, harmonizer, delay lines, crosstalk delay feedback	
Template Based Chord Recognition	2021
<i>Computer Music Representations and Models course in MS</i>	github
<u>Keywords:</u> MIR, chord recognition, librosa, libfmp	
Rhythmic and Harmonic Analysis	2021
<i>Computer Music Representations and Models course in MS</i>	report
<u>Keywords:</u> music theory	

SOUND ANALYSIS SYNTHESIS AND PROCESSING PROJECTS

Wave Digital Filter Modeling	2022
<i>Sound Synthesis and Spatial Processing course in MS</i>	report
<u>Keywords:</u> wdf, matlab, virtual analog	
Leslie Speaker Emulation	2022
<i>Sound Synthesis and Spatial Processing course in MS</i>	report
<u>Keywords:</u> leslie speaker, matlab, digital audio effect	
Acoustic Source Localization with Microphone Array	2022
<i>Digital Audio Analysis and Processing course in MS</i>	report
<u>Keywords:</u> sound localization, doa estimation, matlab, microphone arrays	
RIR Estimation with Wiener Filters	2022
<i>Digital Audio Analysis and Processing course in MS</i>	report
<u>Keywords:</u> room impulse response, wiener filter, matlab, convolution	

MUSICAL ACOUSTICS PROJECTS

Design of a Piano	2023
<i>Musical Acoustics: Characterization of Musical Instruments course in MS</i>	report
<u>Keywords:</u> applied acoustics, comsol, matlab, piano modeling	
Helmholtz Resonator and System Impedance	2022
<i>Musical Acoustics: Modeling of Musical Instruments course in MS</i>	report
<u>Keywords:</u> applied acoustics, helmholtz resonator, matlab	