MATTEO BERNARDINI

Hangzhou, China https://teobe.net matteo@teobe.net

I'm a sound designer and software engineer, born in 1996. My passion is to combine technology in music.

SKILLS

- **Software Development:** OOP/Functional (*Python, Swift, C, C#, C++, Java, Haskell*), Structured Concurrency (asyncio, trio), DevOps (*git, git-annex, Conan, Docker, AWS, CI/CD*), DSP Development (*Juce, Max/MSP, pd*), Web (*HTML, CSS, JS/ES6, VueJs*).
- **Music Production:** Composition & Scoring, Sampling, Foley, Mixing & Mastering (*Logic Pro X, Ableton Live*).
- **Audio Engineering:** Automated Mixing, Digital Filter Design, Sound Analysis & Synthesis, Music Information Retrieval.
- **Artificial Intelligence:** Markov Models, L-Systems, Neural Networks (*CNN, LSTM*), Frameworks (*PyTorch, Keras, scikit-learn*).
- **Computer Graphics:** GLSL/Vulkan, Metal API & MSL, Processing, Blender.
- **Spoken Languages:** Italian (native), Spanish (native), English (C1), Mandarin (A1).

WORK EXPERIENCE

POSITIONS

- **2024-2025 Embedded Software Engineer,** Setmixer
  - DevOps to monitor and scale a fleet of permanent recorders in over 60 venues, via AWS IoT.
  - Lead development of AI solutions for automatic recording processing and mixing, implemented in Python.
- **2022-2024 Senior Software Developer,** Infinite Album
  Development of a real-time & adaptive music generation application in Python and C++.
- **2020-2024 Sound Designer,** BubbleFish Studio
  Music production and sound synchronisation for movies and exhibitions.
- **2019-2020 Research Assistant,** Università degli Studi Roma Tre
  Development of an experimental prototype in Python of a blockchain with distributed storage using DHTs.

RESEARCH & PUBLICATIONS:

- **2021 AlphaXmas,** Research Thesis/AI Application
  Bernardini M., Zhu Y.. AlphaXmas: computer generated Christmas trees and carols using L-systems and RNNs.
- **2019 CEUR Workshop Proceedings,** Research Publication
  Bernardini M., Pennino D., Pizzonia M.. Blockchains Meet Distributed Hash Tables: Decoupling Validation from State Storage.

OWN PROJECTS:

- **2022 Space Poet**, 3D Graphics System (demo1, demo2, demo3)
  Development of an image-controlled Particle System in Metal Shading Language for artistic uses.
- **2020 Meldy**, AI Application
  Lead development of a web-app generating music scores using Markov Chains and symbolic analysis (music21).
- **2020 FlangerG9**, VST plugin
  Lead development of a flanger effect using the Juce framework.
- **2020 SpacEq**, DSP application (spec)
  Lead development of a graphic EQ & multi-band spatial audio panner in SuperCollider,
  remote controlled in OSC by a GUI in Processing.
- **2017 MezzaPiotta**, mobile application (demo)
  Lead development of a mobile application in Xamarin/C# for money spending tracking.
- **2015 mbc**, C library
  Lead development of a symmetric encryption algorithm for didactical purposes.

EDUCATION

- **t.b.c. MSc. in Music Engineering** – Politecnico di Milano, Italy
- **2019 BSc. in Computer Science Engineering** – Università degli Studi Roma Tre, Italy

FIELD INTERESTS

- Generative Music and Creative applications
- Audio Coding/Modelling and Signal Processing
- Distributed Systems and Concurrency
- Data Structures and Integrity