Angelo Antona

Email: resound@angeloantona.it | Phone: +393801466288
LinkedIn:linkedin.com/in/angeloantona/ | GitHub:github.com/AngeloAntona

"Knowing how to listen means possessing, in addition to your own, the minds of others."

— Leonardo da Vinci

EDUCATION

Politecnico di Milano, Milano (Italy) — *Master's Degree in Music and Acoustic Engineering*
sep 2023 – sep 2025 (ongoing)
Key courses: Computer Music (Representations and Models, Languages and Systems), Multimedia Signal Processing, Fundamentals of Acoustics, Advanced Coding Tools and Methodologies.

Developed projects in audio synthesis, signal processing, AI, and IT security.
Current GPA: Excellent (several 30/30 and 30L grades).

Adam Mickiewicz University, Poznań (Poland) — *Erasmus Program – Physics (Master's Degree)*
set 2024 – feb 2025
Insights on mobile systems security, machine learning, and philosophy of science.

Development of projects focused on innovative solutions in mobile security and signal processing.

Politecnico di Milano, Milano (Italy) — *Bachelor's Degree in Computer Engineering*
Sep 2019 – July 2023
Core subjects: Programming foundations (C++, Java, Python), software engineering, and database systems.

Key courses: Information Systems, Communication Signals, Technical Physics, Logic Networks Design Project.

Vincenzo Bellini Conservatory, Caltanissetta (Italy) — *Classical Piano*
Sep2009- Sep2019
Classical piano studies with participation in numerous competitions and masterclasses.

Developed skills such as stress management during live performances, discipline, and artistic sensitivity.

TECHNICAL SKILLS

Programming & Frameworks: C++, Python (TensorFlow, Keras), Java, Kotlin, MATLAB, JavaScript, HTML/CSS.

Audio & DSP: JUCE, SuperCollider, Web Audio API, VST development, beamforming, BFSK, DSP techniques.

Security: Mobile systems security, encryption (AES, bcrypt, PBKDF2), vulnerability analysis.

TRANSVERSAL SKILLS

Creative Problem-Solving: Ability to find innovative solutions in interdisciplinary contexts (music + engineering).

Interdisciplinary Collaboration: Experience working in teams with engineers, technical specialists and musicians.

Adaptability & Stress Management: Strengthened through live performances, music competitions, and complex projects.

Communication: Skilled in presenting technical concepts to non-specialist audiences.

KEY PROJECTS

MiniLab — *Advanced Coding Tools and Methodologies*

Objective: Customizable synthesizer for live performances using the Arturia MiniLab MKII MIDI controller.

Key tech: Web Audio API, C++, MIDI integration, Firebase cloud for preset management.
Results: Fully functional demo, presentation video (GitHub).

Vocoder & Synth Project — *C.M. Languages and Systems*

Objective: Interactive vocoder and synthesizer controlled via footpedals and an accelerometer glove for live performances.

Key tech: C++, SuperCollider, integration of external sensors.

Results: Custom musical tools with a user-friendly graphical interface (GitHub).

Covert Channel BFSK — *Mobile Systems Security*

Objective: Two Android apps collaborating to transmit contact lists via ultrasonic audio channels, bypassing traditional permissions.

Key tech: Binary Frequency-Shift Keying (BFSK), band-pass filters, ultrasonic frequencies (~20 kHz).
Results: Demonstrated potential vulnerabilities in mobile app permissions (GitHub).

SecureNotes — *Mobile Systems Security*

Objective: Android app for secure note management using AES-256 GCM encryption and biometric authentication.

Key tech: bcrypt, PBKDF2, Android Keystore hardware-backed security.

Results: Robust authentication flows and end-to-end encryption for sensitive data (GitHub).

DOA estimator — *Sound Analysis, Synthesis and Processing*

Objective: Direction of Arrival (DOA) estimation system using a 16-microphone array.

Key tech: Delay-and-sum beamforming, custom FFT and STFT implementations, pseudospectrum analysis.
Results: Accurate real-time localization of sound sources with graphical trajectory representation (GitHub).

LANGUAGES

Italian (native),
English (advanced)