



# Lawrence Iviani

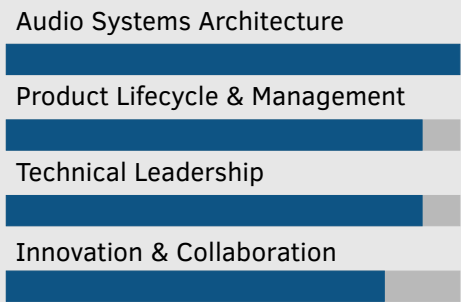
## Principal Audio Architect

- 10 March 1976
- Schauenburgstr. 40, 69221 Dossenheim - Deutschland
- +49 160 90541588
- [www.linkedin.com/in/lawrence-iviani](http://www.linkedin.com/in/lawrence-iviani)
- [lawrence.iviani@gmail.com](mailto:lawrence.iviani@gmail.com)

## About me

I'm a hands-on architect who thrives in collaborative environments. Known for bridging disciplines and keeping communication open between design, DSP, and embedded teams. Driven by curiosity and the satisfaction of turning teamwork into tangible, working systems.

## Main Skills



Embedded & Real-Time Systems- Linux, Yocto, Xenomai, ARM, virtualization\*5.5

Audio System- Design, Prediction, Tuning and Validation\*5.5

Embedded Computing&DSP- Algorithms, measurement, VST, FlowDSP, low-latency design\*5.5

System Integration- C-C++, Python, gRPC, middleware, CI-CD\*5.0 \*

(\*)[The skill scale is from 0 (Fundamental Awareness) to 6 (Expert).]

## Professional Summary

Embedded audio systems architect blending DSP, embedded Linux, and product innovation. Experienced across professional, consumer, and automotive sectors, linking acoustic design with system engineering. Pragmatic and hands-on, from concept and prototyping to integration and customer delivery. Passionate about technology that sounds right, works reliably, and bridges business with real engineering.

## Carrier Evolution

- 2025** FlowDSP System Architecture - Tymphony - Architected modular audio framework on real-time Linux (Elk.OS + FlowDSP), enabling rapid prototyping and SoM-based scalability across OEM products. Expanded leadership in system architecture, gRPC middleware, and BSP integration
- 2024** QNX Virtual Cockpit - Stellantis & AWS - Architected software-defined audio platform on QNX and Qualcomm SoCs. Strengthened expertise in virtualisation, distributed audio pipelines, and automotive cockpit systems
- 2023** A Software Defined Audio Architecture applied to Noise Cancellation and Sound Design (Automotive NVH Comfort conference)
- 2021-2023** Audio Systems Development - Tymphony - Directed European R&D for acoustic system prototyping and platform integration. Unified acoustic, electronic, and mechanical design into working demos for smart speakers and PA products, leveraging several DSP platforms and advanced measurement techniques; Audio Networking (Dante, AVB)
- 2021** Design and Evaluation of a Framework for Reciprocal Speech Interaction in Human-Robot Collaboration (IEEE RO MAN Conference)
- 2018 - 2020** M.Sc. Technology&Business KIT Karlsruhe (Deutschland)  
Master in Product Development
- 2016 - 2020** Harman AudioWorkX Framework - Developed global Python-based measurement and analysis suite. Advanced proficiency in automation, gRPC communication, and multi-team coordination for OEM tuning workflow
- 2016** Carnival Vista AV Integration - Directed integration of distributed entertainment audio systems. Gained field experience in acoustic alignment, networking (Dante), and large-scale commissioning
- 2015** Smart Amplifier Product Line, NXP - Provided Tier-1 OEM acoustic tuning and DSP optimization for mobile devices. Strengthened skills in adaptive signal processing, MATLAB, and algorithm validation
- 2013 - 2014** Automotive Audio Systems, Harman Becker - Developed and tuned OEM audio systems for Smart, Maserati, and Mercedes, combining simulation, acoustic measurement, and system integration expertise
- 2010 - 2013** Armonia DSP Platform, Powersoft - Defined user workflows and amplifier control architecture in C++/Qt. Developed system-level testing strategies, UX specifications, and cross-functional R&D coordination
- 2005 - 2008** M.Sc. Computer Science Engineering Politecnico di Milano (Italy)  
Track in Musical Acoustic and Signal Processing
- 2005** Synchrotron Control Systems, Elettra - Implemented distributed C/C++ middleware (Tango, CORBA) for scientific measurement and control. Built foundation in embedded design, communication protocols, and software reliability
- 1999 - 2003** B.Sc. Telecommunications Engineering Universita' degli studi di Trieste (Italy)

# **LAWRENCE IVIANI,** **20 years of professional experience in Audio Systems and Products Development**

**MSc Product Development (2021)**  
**MSc Information Engineering (2008)**  
**BSc Telecommunications Engineering (2003)**

## PERSONAL DATA

|                  |   |                |                           |
|------------------|---|----------------|---------------------------|
| Name:            | Lawrence Iviani   | Zip Code/City: | 69221 - Dossenheim        |
| Birthday:        | 10.03.1976  | Country:       | Germany                   |
| Marital status:  | Single  | Phone:         | +4916090541588            |
| Address:         | Schauenburgstr. 40  | Mail:          | lawrence.iviani@gmail.com |
| Driving License: | Yes <input type="checkbox"/> No <input type="checkbox"/>  | Citizenship:   | Italian                   |
| LinkedIn         | <a href="https://www.linkedin.com/in/lawrence-iviani">https://www.linkedin.com/in/lawrence-iviani</a> |                |                           |

## PROFILE

Strategic audio systems architect with 20+ years of experience bridging technology and business across professional, consumer, and automotive sectors.

Expert in full product lifecycle, from concept to deployment, combining acoustic design, real-time software, and system integration.

Strong technical leadership and customer-facing experience in embedded NIX (Linux, QNX), real-time DSP frameworks, and audio product architecture (HW & SW).

## Core Competencies

Comfortable operating in fast-moving environments with cross-functional, multicultural teams.

Creative yet disciplined, with a focus on results, empathy, and pragmatic problem-solving.

Experienced in agile collaboration (Scrum Master certified) and customer-driven development.

## Technical Expertise

Product and software lifecycle management • Requirements & Systems Engineering (UML, SysML) • Complex Audio Systems Tuning (Consumer, Automotive, Pro-Audio) • Product development tools (Kano, House of Quality, FMEA) • Agile & CI/CD (Atlassian, Jenkins, Docker) • SoC architecture (ARM A/M) & virtualization (VirtIO) • Real-time and embedded Linux (QNX, Xenomai) • OOP design • Test-driven and cost-based development • Cloud and data analytics (Python, Pandas, SQLAlchemy, Plotly) • gRPC, MQTT and distributed middleware • MATLAB/Simulink • Git version control • YOCTO

## Embedded Audio Expertise

Acoustic simulation, measurement and analysis (EASE, Klippel, Audio Precision, Smaart, REW, Clio) • DSP and ARM architectures • JUCE/VST • Audio and Acoustic systems design and tuning across Professional, Consumer, and Automotive domains • Audio algorithms for analysis, sound reinforcement and voice processing • Audio Networking (AES67, AVB/TSN) • Digital Cockpit Architectures • Human–Machine tuning Interaction and speech interface design • Prototyping and integration C, C++, Python, MATLAB/Simulink • Acoustic lab and hardware lab (oscilloscopes, JTAG, Digital Audio i2s/TDM, A2B, control monitoring interface i2c, UART, LIN, CAN)

## JOB POSITIONS

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### **DEEL - Tymphany / Peerless Group – Germany (Remote)**

**Senior Customer Solutions Architect (FlowDSP) | Sep 2024 – Dec 2025**

**Sector:** Professional Audio, Embedded Linux Systems

**Focus:** Leading embedded audio system design for next-gen pro-audio products using FlowDSP, Elk.OS, and custom SoC platforms.

**Highlights:**

- Defined scalable hardware/software architectures bridging business and engineering.
- Coordinated BSP and middleware integration with FlowDSP and Elk Audio OS partners.
- Created trade-show and OEM demos showcasing real-time Linux VST hosting.
- Co-inventor of a pending *Automix* patent for intelligent musical-source mixing.

**Tools/Tech:** Python, gRPC, Xenomai, ARM Linux (i.MX8, D905), Yocto, Docker, STM32), System Tuning

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### **BlackBerry QNX – Germany (Remote)**

**Principal Audio Solution Architect, Global Acoustics | Jun 2023 – Aug 2024**

**Sector:** Automotive Embedded Systems

**Focus:** Supported QNX Audio sales strategy, digital cockpit design, and OEM architecture discussions.

**Highlights:**

- Led RFI/RFQ technical engagements and onsite demonstrations on Qualcomm SoCs.
- Drove SDV (Software-Defined Vehicle) adoption for the audio stack.
- Represented QNX at automotive conferences; contributed to technical papers.

**Tools/Tech:** QNX RTOS, C, VirtIO, Virtualisation, Automotive Middleware, CAN, System Tuning

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### **Tymphany Acoustic Technology – Germany (Remote)**

**Audio Architect – Team Leader EU | Aug 2021 – May 2023**

**Sector:** Professional & Consumer Audio Manufacturing

**Focus:** Pre-sales, R&D coordination, and prototype development for new audio products.

**Highlights:**

- Managed European R&D team (3 people) integrating acoustic, electronic, and mechanical design.
- Led prototype and proof-of-concept builds for smart speakers, soundbars, and PA systems.
- Introduced advanced acoustic analysis (e.g., Klippel linearization).

**Tools/Tech:** Python, Acoustic Measurement Systems and Tuning, Audio Precision, Klippel

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### **FZI – Karlsruhe Institute of Technology (Germany)**

**Research Assistant (Hi-Wi) | May 2021 – May 2022**

**Sector:** Academic Research / Robotics

**Focus:** Developed speech-interaction framework for human–robot communication.

**Highlights:**

- Co-developed **LISA**, a speech-recognition and ROS-based HMI framework.

**Tools/Tech:** C/C++, Python, ROS, MQTT, Linux Embedded

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### **Harman Becker GmbH – Karlsbad, Germany**

**Audio Architect & Product Specialist | Aug 2016 – Jan 2021**

**Sector:** Automotive & Consumer Audio

**Focus:** Architecture and development of Harman's AudioWorkX tuning framework.

**Highlights:**

- Led 4-person team developing acoustic measurement module in Python.
  - Supported global tuning tools and coordinated system engineers worldwide.
  - Delivered successful demos to OEMs; improved customer retention.
- Tools/Tech:** Python, C/C#, MATLAB, gRPC, Protobuf, Scrum, System Tuning
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**NXP Semiconductors (Now GOODIX) – Leuven, Belgium**  
**Senior Application Support Engineer** | *Sep 2014 – May 2016*

**Sector:** Semiconductors / Consumer Electronics

**Focus:** Field support for **TFA98xx Smart Amplifiers** (speaker protection and tuning).

**Highlights:**

- Supported Tier-1 customers (Samsung, Oppo, Xiaomi) in tuning and design.
- Developed MATLAB acoustic tests and demo setups for marketing and fairs.
- Contributed to winning Samsung Galaxy tablet and smartphone design-ins.

**Tools/Tech:** MATLAB/Simulink, Android, Acoustic Testing, Klippel, Audio Precision, System Tuning

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**Harman Becker GmbH – Karlsbad, Germany**  
**Acoustic Systems Engineer** | *Oct 2013 – Sep 2014*

**Sector:** Automotive Audio Systems

**Focus:** Audio system design and OEM support for premium vehicles.

**Highlights:**

- Designed and tuned systems for Smart, Maserati (Ghibli, Levante), Mercedes (A-Class).
- Defined system requirements for amplifiers, speakers, and integration.

**Tools/Tech:** MATLAB, MATLAB/Simulink, Electroacoustic Measurement, Klippel, Audio Precision, CAN, System Tuning

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**Powersoft S.r.l – Florence, Italy**  
**System Engineer & Application Support** | *Sep 2010 – Aug 2013*

**Sector:** Professional Amplification

**Focus:** Field support, training, and R&D liaison for amplifier software and hardware.

**Highlights:**

- Product specialist for Armonía control software and X-Series amplifier line.
- Designed requirements and UI/UX specifications for new products.
- Led education programs and system integration (Crestron, Mediamatrix).

**Tools/Tech:** C++, Qt, Acoustic Measurement, MATLAB, Audio Precision, Clio, System Tuning

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**ELETTRA Sincrotrone – Trieste, Italy**  
**Software Engineer** | *Sep 2003 – Aug 2005*

**Sector:** Scientific Research & Technology Transfer

**Focus:** Embedded software for measurement and control systems.

**Highlights:**

- Developed distributed control systems (Tango, CORBA, SOAP) for synchrotron facilities.

**Tools/Tech:** C/C++, Linux Embedded, Tango Controls, LabView

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**Freelance**

**Sound Engineer / Live System Designer** | *1999 – 2015 (Self-employed)*

**Sector:** Live & Installed Sound, Cruise Ships

**Focus:** FOH mixing, large-venue setup and tuning, DSP programming, integration and installations.

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## Earlier Roles (Pre-Career)

- **Alcatel – Trieste, Italy (2000–2001)** | End-of-Line Tester for large Fiber Optics WDM systems
- **ItalTBS – Trieste, Italy (1997–1999)** | Resident Medical Devices Technician in several healthcare facilities
- **Mandatory Military Service (1997)** | Telecommunications specialist

## MAIN EDUCATION

### **M.Sc. Product Development** – *Karlsruhe Institute of Technology (KIT), Germany, 2021*

Focus on product innovation, lean design methodology, and systems-oriented product approach.

### **M.Sc. Information Engineering (Acoustic Engineering Track)** – *Politecnico di Milano, Italy, 2008*

Specialisation in acoustics, adaptive DSP, and algorithm development for audio systems. (80 / 120 CFU)

### **B.Sc. Telecommunications Engineering** – *University of Trieste, Italy, 2003*

Focus on digital signal processing, electronics, and software for communications.

### **Diploma di Maturità Telecommunications** – *I.T.I.S. Trieste, Italy, 1996*

## LANGUAGE PROFICIENCY

Italian (native) | English (business fluent, C1) | German (intermediate, B1)

## PUBLICATIONS

2023 - [A Software Defined Audio Architecture applied to Noise Cancellation and Sound Design \(Automotive NVH Comfort conference\)](#)

2021 - [Design and Evaluation of a Framework for Reciprocal Speech Interaction in Human-Robot Collaboration \(IEEE RO MAN Conference\)](#)

2007 - [A New Device for Bimorph Mirrors Technology: the A1902BS Bipolar Power Supply System](#)

2005 - [Elettra Virtual Collaboratory: the evolution of a Virtual Laboratory Software from a simple web application to the GRIDCC](#)

2005 - [Integrate Control System For Bipolar Power Supply Modules in 3rd party control system \(Tango and EPICS\)](#)

2004 - [Elettra Virtual Collaboratory: the evolution of a Virtual Laboratory Software from a simple web application to the GRIDCC](#)

2003 - [A New Device for Bimorph Mirrors Technology: the A1902BS Bipolar Power Supply System](#)