Stefano Tomassetti

Curriculum Vitae

" You're never really done for, as long as you've got a good story and someone to tell it to." –The Legend of 1900

Experience

Vocational

2021 – present
DSP Engineer, VISCOUNT INTERNATIONAL, Mondaino, Research&Development of Ancona.
DSP software developer and designer for advanced physical sound generation models. Optimisation of firmware processing flow on SHARC architecture.

Detailed achievements:
- Real-time embedded audio DSP and Firmware development
- Embedded DSP and Firmware architecture, design, development and support
- Skilled in C/C++ programming language
- Experience in audio/speech/sound processing algorithms and technologies development
- Knowledge of FIR/IIR filter architecture, FFT algorithms and optimization for embedded applications
- Skilled in SIMD optimisation
- Delay line based audio musical effects design and implementation (Reverb, Chorus, Phaser, Flanger, etc.)
- Linux-based software programming for embedded platform
- Knowledge and design of physical modelling synthesis models

2019 – present
Techical, Software and Sound Design consultant, VISCOUNT INTERNATIONAL, Mondaino, Research&Development of Ancona.
Consultant in Neural Networks and Physical Modelling field. Sound Designer and Audio consultant specialized in Physical Modeling parametrization and design. Sound Designer using PCM Synthesis. Audio Tools developer (Python, C, C++). GUI developer (Qt, JUCE). Embedded systems and DSP software developer (Embedded C).

Detailed achievements:
- Learned how to process audio complex signals
- Improve Digital Audio processing skills
- Digital Audio Effects analysis and modeling
- Developing of ad-hoc audio tools in different programming languages
- Physical Models design
- Italian and US patents on Audio Processing and Physical Modeling
- PCM Synthesis using DREAM Instrument Editor SDK
- Graphic User Interfaces concept and design
- DSP Software design and implementation

2020 – present	**Artificial Intelligence Consultant**, M-Live S.r.l., San Giovanni in Marignano. Consultant in Neural Networks field manipulating complex audio signal.
2020	**Project Consultant**, RC Elettronica, Fossato di Vico. Project specification collection for project "IGEA Care".
2016–2019	**Researcher**, Viscount International – UnivPM, Mondaino, Research&Development of Ancona. Researcher in Neural Networks and Physical Modelling field. Starting a new scientific research current based on the use of Neural Networks to parametrize physical models. Detailed achievements: ○ Learned how to process audio signal ○ Improve Digital Audio processing skills ○ Learned how to face up new research themes ○ Learned how to manage work and time ○ Scientific Publications ○ Italian and US patents on Audio Processing and Physical Modeling
2016–2018	**Product Developer**, Jump Music Equipment, Fossato di Vico. Musical Equipment developer. I developed and tested an innovative guitar pedal and its interface. Project presented at Milano SHG 2016. Detailed achievements: ○ Learned how to process guitar audio signal ○ Improve Analog and Digital Audio processing skills ○ Musical skills used to test products
2017–2019	**Lizard Enabled Teacher** , Lizard Accademie Musicali, Marotta-Mondolfo. Lizard enabling to teach in pre-academic SMB courses and academic SPM courses for the years 2017/2018.
2006–present	**Musician**, Freelance. Freelance musician activity in many different musical situations improving my musical skills and even my marketing skills. I maintained musical and engineering studies by doing this.

Miscellaneous

2008–2009	**Audio & light services**, *Freelance*, Corinaldo. Worked as freelance apprentice in many different audio & light service activities.
2007–2008	**Plumber Apprentice**, Corinaldo. Worked as apprentice in by a plumber in my city.
–	**Family activity**, Corinaldo. I still collaborate with my parents' farm activity.

Education

2014–2016	**Laurea Magistrale in Ingegneria Elettronica e Telecomunicazioni**, *Universitá Politecnica delle Marche*, UNIVPM-Ancona, *110/110 e lode*. DII – Dipartimento Ingegneria dell'Informazione
2011–2014	**Laurea Triennale in Ingegneria Elettronica e Telecomunicazioni**, *Universitá Politecnica delle Marche*, UNIVPM-Ancona, *109/110*. DII – Dipartimento Ingegneria dell'Informazione
2006–2011	**Diploma Perito Elettronico e Telecomunicazioni**, *ITIS G. Marconi*, Jesi, *100/100*. Elettronica e Telecomunicazioni
2015–2019	**Corso Professionale Chitarra Elettrica Rock-Blues**, *Lizard Accademie Musicali*, Fiesole, 30/30 Lode e Menzione Speciale.
2016	**Computer Music And Production specialization course**, *Universitá Politecnica delle Marche*, UNIVPM-Ancona.

Masters Thesis

Title	*Artificial Neural Networks For Acoustic Beamforming*
Supervisors	Professor Stefano Squartini and Researcher Emanuele Principi
Description	This thesis explored the idea that Neural Network could have optimal performances in audio-noisy contexts to improve speech quality using microphone arrays even in non-geometrical and time varying configurations.
Status	Published

Awards

2019	Master Degree at "Lizard Accademie Musicali" with score 30/30 *Lode e Menzione Speciale*
2017	3rd Level Degree at "Lizard Accademie Musicali"
2016	2nd Level Degree at "Lizard Accademie Musicali" with Special Tutor evaluation ("cum laude" equivalent)
2011	Participate at "Olimpiadi dell'elettronica" national competition

Scientific Publications

JAES-2019	Timbre Equalization of Wind Instruments Physical Models using a Random Iterative Search Algorithm
TALSP-2019	A Multi-Stage Algorithm for Acoustic Physical Model Parameters Estimation
TETCI-2018	End-to-End Learning for Physics-based Acoustic Modelling
WIRN-2017	Neural Beamforming for Speech Enhancement:Preliminary Results
DAFx-2017	Introducing Deep Machine Learning For Parameters Estimation In Physical Modelling

Patents

2019	*GENERATION SYSTEM OF SYNTHESIZED SOUND IN MUSIC INSTRUMENTS*

2018   *SISTEMA PER LA GENERAZIONE DI SUONO SINTETIZZATO IN STRUMENTI MUSICALI*

Computer skills

Advanced	MATLAB, Ableton, LATEX, PYTHON, Ocenaudio, DREAM, Adobe Audition, PyQt, JUCE, Keras, TensorFlow, Embedded C, DSP Programming, C, C++
Intermediate	JAVA, OpenOffice, Linux, Microsoft Windows, Cubase, VST plug-in, EaglePCB
Basic	FORTRAN, Adobe Suite

Languages

Italian	**Mothertongue**	
English	**Intermediate**	*Conversationally fluent*
Spanish, French	**Basic**	*Basic words and phrases only*