Marc Siquier Peñafort

Palma, Illes Balears, Spain

(+34) 636 12 17 69 • marcsiquierpenyafort@gmail.com
marcsiq.github.io

Digital Signal Processing (DSP) Engineer
MSc on Sound and Music Computing (MTG-UPF).
Audiovisual Systems Engineer (ETSETB, Telecom-BCN, UPC).
Passionate about technology and music.

Work Experience

Blackstar Amplification Ltd **Northampton, United Kingdom**
DSP Engineer *March 2020 – June 2021*

DSP algorithm development, implementation and optimisation. This includes both high-level modelling (audio plug-ins, standalone apps) and assembler level optimisation on the target platforms. Also providing creative design input, assisting in project planning, scoping and problem solving in terms of software.

Meridian Audio Ltd. **Huntingdon, United Kingdom**
DSP Engineer *February 2018 – February 2020*

Orchestrating development and implementation of audio algorithms and DSP code for both Meridian Core products and collaborative LG Electronics products. Maintaining and developing the whole Meridian software ecosystem, from the embedded software host to the actual DSP code.

Barcelona Supercomputing Center, BSC-CNS **Barcelona, Spain**
Developer *April 2015 – December 2017*

Working at the Computer Science - Storage Systems department, on the European IOStack project. The main objective was to create software-defined Storage (SDS) toolkit for Big Data on top of the OpenStack platform, enabling efficient execution of virtualized analytics applications over virtualized storage resources.

AMES - Sintered Metallic Components **Barcelona, Spain**
Developer *November 2014 – February 2015*

Created an app to detect imperfections on metal sintered pieces as part of AMES quality system based on acquisition of vibration signals of the pieces, signal processing and classification algorithm based on Neural Networks.

University Education

Universitat Pompeu Fabra - UPF **Barcelona, Spain**
MSc on Sound and Music Computing *2016 – 2017*

Practical and theoretical approaches in topics such as computational modeling, audio engineering, perception, cognition, and interactive systems, the program gives the scientific and technological background needed to start a research or professional career in audio computing. From the generation and analysis of sounds to their transmission and perception, and its analysis from a technical and computational point of view.

- **Master's Thesis:** *'Computational modeling of expressive music performance in hexaphonic guitar'* [link]

In this master thesis, supervised by Sergio Giraldo, I developed a machine learning approach to automatically generate expressive music performances from non-expressive music scores of polyphonic guitar, treating guitar as an hexaphonic instrument.

Universitat Politècnica de Catalunya - ETSETB TelecomBCN **Barcelona, Spain**
University Degree on Audiovisual Systems Engineering *2010 – 2015*

Fundamentals and applications of audio, video and multimedia systems and acquisition techniques for the analysis and synthesis of electrical and electronic circuits and digital and analogue communications. Specialization in acoustics and sound systems, digital signal processing, communication systems, electronic equipment and devices and multimedia techniques.

- **Degree's final project:** *'Query by Singing/Humming (Android App)'* [link]
  This challenging project took place from September 2015 to February 2015 and consisted in the design and development of an Android App in order to recognize songs hummed by the users. Creation of a dynamic database, programming a C++ server in order to receive queries and retrieve results to the app.

Education

Conservatori Professional de Música i Dansa de Mallorca **Palma, Spain**
Professional Grade of violin *2004 – 2010*

Conservatori Professional de Música i Dansa de Mallorca **Palma, Spain**
Elementary Grade of violin *2000 – 2004*

Colegio San Cayetano **Palma, Spain**
Primary and Secondary studies *1996 – 2010*

Publications

- R.Nou, A.Miranda, M.Siquier, T.Cortes. Improving OpenStack Swift interaction with the I/O Stack to enable Software Defined Storage. *IEEE SC2-2017. The 7th IEEE International Symposium on Cloud and Service Computing,* Kanazawa, Japan, November 2017. [link]
- M.Siquier, S.Giraldo, R.Ramírez. Computational modelling of expressive music performance in hexaphonic guitar. *Proc. of the 10th International Workshop of Machine learning and music,* Barcelona, Spain, October 2017. [link]

Technical and Personal skills

Languages: Catalan (mother tongue), Spanish (mother tongue), English (Cambridge Certificate in Advance English, June 2015).
Programming Languages: Proficient in: C/C++, Python, Matlab, Assembly
Also medium ability with: JavaScript, Java, Bash, SQL, PHP, Android SDK, R.
Frameworks: JUCE, SHARC DSP, Motorola DSP, ARM Cortex-M, PureData, Max, SigmaStudio.
Technical skills: Digital Signal Processing, Audio Processing, Audio Electronics, Audio Plugins Development, Machine Learning, Pattern Recognition, Bio-metrics, Acoustics, Music Technology, Music recording, Music production, GIT Version Control, Linux systems, LaTex.

On-line Courses

Audio Coding: Beyond MP3 — **edX**
Universitat Politècnica de València — *September 2017*

Machine Learning for musicians and artists — **Kadenze**
Goldsmiths University of London — *June 2017*

Audio Signal Processing For Music Applications — **Coursera**
Universitat Pompeu Fabra & Standford University — *September 2016*

Machine Learning — **Coursera**
Stanford University — *June 2016*