Emilio Molina

CONTACT

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Github: **/emilio-molina**
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COURSES & OTHERS

Deep Learning Nanodegree Foundation (Udacity, 2018)
Professional Degree of Piano (Conservatori del Liceu, Barcelona, 2011)

TECHS

Unix • Git • Docker • AWS • GCP • MySQL • MongoDB • Jenkins • Bash • Python • Django • Flask • FastAPI • uWSGI • Pandas • Numpy • Keras • TensorFlow • Scikit-learn • Jupyter • Matplotlib • Bokeh • Librosa • Essentia • OpenCV • Pytest • Unittest • Flake8 • C++ • Boost • FFTW3 • TensorFlow C++ API • pybind11 • VTune • Cpplint • HTML • Bootstrap • CSS • Javascript • jQuery • Java • Lucene • Tomcat

LANGUAGES

Spanish: Mother tongue
English: Certificate in Advanced English (CAE) (University of Cambridge, July 2013)
French: DELF B2 French Certificate (May 2010) (Universit´e de Lille)

EXPERIENCE

BMAT | R&D Engineer

Jan 2015 - Present | Barcelona / Remote

Leading role in a R&D team of 6 members during more than 5 years.

Research

- Applied data science to improve system for entity resolution of noisy music metadata from multiple sources. Achieved -60% false positives, model in production.
- Improved audio fingerprinting technology for background music and pitch-shifting. Gained +300% id-rate in challenging scenarios for the main company product.
- Built music detection system using machine learning. Best algorithm in MIREX 2018.

Development

- Implemented core audio fingerprinting algorithm in C++11. Achieved -80% in computational cost with respect to previous legacy code. In production. Running 24/7 in production in >4000 CPU cores.
- Implementation of music detection system with TensorFlow C++ API. In production.
- Developed several audio and video annotation web tools. Backend in Django, frontend with Bootstrap and Javascript. Used by external freelances for QA processes.
- Implemented several HTTP REST APIs (Flask, FastAPI, Django) in order to provide our techs as microservices for other applications in the company.

UNIVERSIDAD DE MÁLAGA | R&D Engineer

January 2012 – January 2015 | Málaga

- Research and development of algorithms on music information retrieval and audio processing, using C++, Python and Matlab.
- Publication of multiple journal and conference papers, leading to a PhD thesis. List in https://emilio-molina.github.io/publications

EDUCATION

PhD, Music Information Retrieval

2012 - 2017 | Universidad de Málaga

- E.Molina, "Singing Information Processing: Techniques and Applications", PhD Thesis. University of Málaga, 2017.

Master's Degree, Sound and Music Computing

2010 - 2012 | Universitat Pompeu Fabra, Barcelona

- Digital signal processing. Machine learning. Time series analysis. Music Production.

Telecommunication Engineering

2007 - 2012 | Universidad de Málaga

- Dissertation "Software tool for the correction of dissonances in polyphonic music", awarded the Finalist Ericsson National Prize on Applications for Multimedia Environments in May 2013. Erasmus studentship at Polytech Lille (France) (Sept. 2009 - June 2011).

Technical Degree in Telecommunications, Sound and Image

2003 - 2007 | Universidad de Málaga

- Dissertation "Multitrack environment for audio recording in C#", awarded the Best Project in Technical Telecommunication Engineering at University of Málaga. Award for Best Academic Record