Emilio Molina

CONTACT

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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 | SENIOR R&D ENGINEER

Jan 2018 - Present | Barcelona / Remote

Leading role in a R&D team of 6 members

- Applied data science to improve system for entity resolution of noisy music metadata (title, artist, contributors...) from multiple sources. Reduced false positives by a 60%, developed code (Python) and 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. In production.
- Built music detection system using TensorFlow C++ API. Best algorithm in MIREX 2018. In production.
- Implemented core audio fingerprinting algorithm in C++11. Achieved -80% in computational cost with respect to previous legacy code. Running 24/7 in production in >4000 CPU cores.

BMAT | R&D ENGINEER

Jan 2015 - Jan 2018 | Barcelona

- Maintenance and addition of new features to existing core production code, in C++, Java and Python.
- Applied data science techniques in order to measure performance improvements of such new features.
- Developed several audio and video annotation web tools. Backend in Django, frontend with Bootstrap and Javascript. Used by external freelances for annotation and QA processes.
- Prepared dataset, and implemented music detection system using audio features and classical machine learning. In production during more than 3 years.
- Implemented several HTTP REST APIs (Flask, 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". Erasmus studentship at Polytech Lille (France) (Sept. 2009 - June 2010).

TECHNICAL DEGREE IN TELECOMMUNICATIONS, SOUND AND IMAGE

2003 - 2007 | Universidad de Málaga

• Award for Best Academic Record