Mohammed **Boujemaoui**

Telecommunications Engineer · Software Engineer

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"Good design adds value faster than it adds cost"

Skills

Personal Skills

- Great team player with good interaction in multi-disciplinary teams
- Self-motivated individual with a pro-active approach to work assignments
- Ability to follow the industry-standard design and methodology patterns
- Ability to quickly pick-up new technologies with keen interest in and out of the workplace
- Ability to solve complex problems with application design, development and user experience

Software Engineering

- Experience building or supporting High-Frequency-Trading and Financial systems
- Experience building complex, highly scalable software systems
- Experience building low latency systems
- Test/Behavior Driven Development (TDD / BDD)
- Digital Signal Processing: audio-image and speech processing, computer vision, modulation, filtering...
- Expertise in C++ (C++11/14/17). Familiar with C, Java, Python, JavaScript and Go
- Algorithm Analysis; Profiling and Optimizations (Vectorization, Low Latency, Multi-Thread, SIMD, DSP...)
- Mathematical Analysis: algorithms, complex arithmetic, linear algebra, differential and integral calculus...
- Data Engineering, Machine Learning and Analysis in Python & MATLAB

Work Experience

IMC Trading

Amsterdam, Netherlands

C/C++ Software Engineer

May 2019 - Present

- Development of Low-Latency Automated Trading Systems
- Implementation and Optimization of Trading Algorithms
- Development, testing, and analysis of in-house Trading Strategies
- Monitoring and consolidation of in-house Trading System
- Deploy, monitor, troubleshoot and manage in-house Trading System
- Provide technical expertise and support to a high frequency trading floor
- Development of large scale distributed systems and service oriented architecture
- Development of front-end solution for analysis and configuration of Financial systems
- **Proficient Technologies**: C++17, STL, FPGA, Linux, TCP/UDB, Databases, Python, Java, JavaScript

Prophesee

Paris, France

C/C++ Algorithm Engineer

February 2018 - May 2019

- Agile software development methodologies
- Image Signal Processing, Computer Vision & Machine Learning
- Design, development and integration of Computer Vision algorithms in Intel and ARM architecture.
- Embedded Software Development for automotive projects.
- Profiling and optimization in embedded devices using native tools.
- Test Driven Development: design and integration of unitary test
- **Engineering Fields**: Event Base Cameras, DSP, SLAM, Motion Segmentation, Tracking & Calibration
- **Proficient Technologies**: C++11, C++14, C, STL, Boost, OpenCV, OpenGL, Python, Qt

Arkamys

Paris, France

C/C++ DSP Software Engineer

August 2017 - January 2018

- Agile software development methodologies
- Audio DSP Engineering: design, development & integration of DSP algorithms for ARM architecture & Digital Signal Processors.
- Embedded Software Development of audio & acoustic solutions for automotive projects.
- Development and customization of Unix Embedded Systems for different boards according to the project requirements.
- Profiling and optimization in embedded devices using native tools.
- Digital Signal Processors development: Sharc, Texas Instruments and Qualcomm.
- Test Driven Development: design and integration of unitary test
- **Engineering Fields**: DSP, Audio Enhancement, Auditory Analysis, Audio Effects & 3D-Audio
- **Proficient Technologies**: Embedded C, Embedded C++, C++11, C++14, C, Unix, STL, DSP, MATLAB, Qt, Catch

Appfluence Inc.

Granada, Spain - Silicon Valley, USA

C/C++ Software Engineer

May 2015 - July 2017

- Agile Software Development
- Multi-platform (Windows, Unix and Mobile devices) development using C/C++
- Created specific software and devised testing scenarios (Behavior/Test Driven Development, TDD/BDD) to ensure optimum levels of efficiency and to cover and identify software problems.
- Research, design and implement scalable applications, keeping up to date with the current Qt & modern C++ Developer Patterns
- Designing, enhancing and supporting the existing software and associated tool-set to correct errors.
- Profiling and optimization: Intel VTune (Windows) and Valgrind (Unix)
- Cross-platform UI design using Qt Framework (QWidgets and QML).
- **Proficient Technologies**: C++11, C++14, STL, Boost, Qt, Google Test, Catch, Qt Test, Protobuf

Education

University of Granada

Granada, Spain

M. S. in Telecommunications Engineering

Sept. 2015 - Jun 2017

- Advanced Digital Signal Processing & Telecommunications Systems
- Algorithm Engineering and Data Processing
- Electronic Engineering
- Embedded Software Development
- **Thesis:** Design and implementation of a multi-platform application that implements a local positioning system (LPS) based on the Time-Of-Flight of the signal using the sound/ultrasound spectral frequencies.

University of Granada

Granada, Spain

B. S. in Telecommunications Engineering

Sept. 2011 - Sept. 2015

- Telecommunications Systems Engineering
- Analog/Digital Signal Processing
- Analog/Digital Systems Engineering
- Electronic Engineering
- Software Engineering: Algorithmic, Data Structures and Design Pattern
- **Thesis:** Design and implementation of an application that process and extracts audio properties in real time for medical usage. The application implements the main generic DSP algorithms to display the different acoustic properties in real time.

Awards

2015	**Winner**, "Premio Ingenio Junior 2015": best Bachelor's Thesis in Telecommunications Engineering given by the Official College of Telecommunications Engineers of Andalusia	*COITTA / AAGIT*
2013	**Winner**, 1º Startup Week Granada: best start up project given by the University of Granada	*ETSIIT, UGR*

Contributions

WinToast

C++

Win32 C++ Library

October 2016 - Present

- WinToast is a light library written in C++ which brings a complete integration of the new toast notifications of Windows 8 & Windows 10 in a clean and straightforward interface. WinToast is integrated into different open-source projects, Git for Windows deserves a special mention.
- **Officially used in Git (for Windows), Firefox, QGIC, MegAsync and others.**

eDSP

C++

DSP Meta-programming Library written in C++

October 2017 - Present

- EasyDSP is a cross-platform DSP library written in modern C++. It is a header-only library that harnesses the power of C++ templates to implement a complete set of DSP algorithms.

AcousticLPS

C/C++

Acoustic Local Position System for portable devices

March 2017 - Present

- Acoustic LPS is an advanced signal processing tool suitable for indoor positioning of portable devices. The application uses modulated acoustic signals (M-QPSK) with different encoding codes (CDMA-based) to locate devices in indoor environments by estimating the Time Of Arrival (TOA) of the different reference signals.

SoundMaps

C/C++

Local Positioning System for portable devices (Android, iOS & Windows Phone

July 2017 - Present

- The project aims to be the adaptation of the Acoustic LPS project for mobile platforms. It implements an advanced signal processing tool suitable for indoor positioning systems based in acoustic properties specially designed for tablets, mobile phones and embedded devices.

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