

Mircea NICOLAESCU

ABOUT

Passionate about Electronic Design Automation and concurrency in modern C++(14/17/20). Fluent in English, French, and Romanian (native).

INDUSTRY EXPERIENCE

R&D Engineer C++ (Full time) since Feb 2015
Synopsys Inc, System Design Group, Marlborough MA and Paris, France.

Pre-silicon Low Power aware verification using FPGA based HW emulation platforms ZeBu and HAPS as part of the ZeBu Compiler BE team. Performance and debug.

- actively working with C++11 and C++14.
- parallelize BE algorithms using the STL concurrency API in order to improve performance. 80% compile time improvement.
- HW-SW runtime synchronization using the STL concurrency API. The goal is to reduce the throughput caused by HW-SW signaling messages that monitor the state of the HW while maintaining good latency. 89% throughput improvement with 4% latency degradation.
- improve unit test coverage using the Boost framework, achieve and maintain 85% or higher code coverage.
- integration testing using System Verilog, VHDL hardware description languages and bash, csh, Tcl scripting languages.

Software Engineer C++ (Full time) Nov 2014 – Jan 2015
Amadeus IT Group, Sophia Antipolis, France.

Amadeus payment platform BE.

- performed SW design, documentation, development, implementation, and unit testing of SW modules.
- investigated, root caused and fixed SW defects.

Firmware Engineer (Internship) Apr 2014 – Aug 2014
Intel Corporation, Sophia Antipolis, France.

SystemC simulator of LTE Cell Searcher Component. LTE FW optimizations.

- developed a cycle accurate simulator of the LTE Cell Searcher Component using the SystemC C++ class library.
- conducted performance analysis of the SW algorithms that enable LTE handover and synchronization.
- proposed a scheduling algorithm to minimize execution time by using a weighted priority scheduling algorithm based on the sequence of tasks constraints and the shortest remaining time of each task.

Software Engineer C++ (Full time) May 2013 – Aug 2013
Freescale Semiconductor, Bucharest, Romania.

Simulator of Vector Signal Processor Architecture DSP.

- worked on an instruction set simulator of VSPA family of DSPs using the C++ programming language.
- conducted performance analysis, optimization, and delivery of quality software.
- supported new features, unit testing and fixed code defects.

Software Engineer C++ (Full time) Sep 2012 – Apr 2013
GRAITEC, Bucharest, Romania.
Graitec Advance Concrete (plug-in AutoCAD).

- worked on a plug-in for AutoCAD that enables modeling and detailing reinforced concrete structures, using the C++ programming language.
- investigated, root caused and fixed SW defects.

Mobile Application Developer (Internship) Jun 2011 – Aug 2011
Nokia Labs @UPB, Bucharest, Romania.
Guitar Jam, Drums Jam - guitar & drums emulators for Symbian devices.

- developed two applications, Guitar Jam and Drums Jam, for Symbian mobile devices using QML for the interface and C++ for the core functionalities.
- used HW features such as multi-touch and the accelerometer to improve user experience.
- the applications won first prize the TRIPOD and UPB scientific session student competitions and honorable mention in the Nokia Qt developers' competition.

EDUCATION

PhD Candidate, Electronics and Telecommunications Engineering
University POLITEHNICA of Bucharest (UPB), Bucharest, Romania, 2016 – exp 2022
Title: Contributions to the electromagnetic compatibility of digital circuits and systems

MSc, Telecommunications Engineering (double degree with UPB)
CentraleSupélec, Gif-sur-Yvette, France, 2013 – 2014
Program of study: Advanced Wireless Communication Systems

MSc, Electronics and Telecommunications Engineering
University POLITEHNICA of Bucharest (UPB), Bucharest, Romania, 2012 – 2014
Program of study: Advanced Software Technologies for Communications

BSc, Electronics and Telecommunications Engineering (Valedictorian)
University POLITEHNICA of Bucharest (UPB), Bucharest, Romania, 2008 – 2012
Program of study: Networking and Telecommunications Software

SKILLS

C++, C, bash, csh, gdb, SystemVerilog, UPF, Tcl, L^AT_EX, Linux OS.

INTERESTS & ACTIVITIES

Competitions: Scientific Session UPB 2013 (1st prize), TRIPOD 2011 (1st prize), Nokia Qt 2011 (mention), RoboChallenge 2010, Hackathon Innovation Labs 2013.
Hobbies: Finance, History, Running, Soccer, Skiing.