Adriano de A. A. Mourão

R&D Software Engineer

✉ *mourao.aaa@gmail.com*
spiral-code.org/
github.com/aaamourao
www.linkedin.com/in/adriano-mourão/

Work Experience

11/2020–present **R&D Software Engineer**, INSTITUTO DE PESQUISAS ELDORADO. Campinas, SP - Brazil.
Development of embedded camera systems for Android based smartphones. Working on the feature development, kernel/userspace modules and system stabilization for Motorola smartphone's (Android) camera systems. (C++, Computer Vision, Image Signal Processing, Embedded Linux, Android)

10/2020–11/2020 **Senior Software Engineer**, ACCENTURE. Belo Horizonte, MG - Brazil.
Designed, refactored and developed a video analytics platform based on microservices. Responsible for its deployment and production support. (Python, Bash, TDD, OpenCV, TensorFlow, Keras, Flask, Swagger, Apache Pulsar, Docker, Git, AWS, Azure DeveOps, Microservices, Video Streaming, RTSP)

10/2019–09/2020 **Machine Learning Software Engineer**, ACCENTURE. Belo Horizonte, MG - Brazil.
Worked in a Research, Development and Innovation (RD&I) project focused on Deep Learning-based Computer Vision and Video Analytics. Overcoming challenges related to object detection, pose estimation, tracking, activity recognition. Contributions to the solution as a whole: developing a Video Analytics platform based on microservices; initial exploratory data analysis and preprocessing (cleaning, labeling, and data augmentation); designing and training machine learning models; analyzing results through different performance metrics; developing and supporting libraries required by the software architecture. (Python, Bash, TDD, OpenCV, TensorFlow, Keras, Flask, Swagger, Apache Pulsar, Docker, Git, AWS, Azure DeveOps, Microservices, Video Streaming, RTSP).

01/2015–03/2016 **Software Engineer**, CADENCE DESIGN SYSTEMS. Belo Horizonte, MG - Brazil.
Worked analysing failures and bugs in a Formal Verification Tool, JasperGold, written in C++. Developed and managed a complex distributed regression system. Developed Verilog/VHDL designs and Tcl scripts of different complexities for a complete testing coverage of the tool. Developed Python and Bash scripts for automating many different tasks. (Python, Django, C++, Tcl, Bash, Verilog, VHDL, Mercurial, Jira, Formal Verification).

04/2014–12/2014 **QA Intern**, CADENCE DESIGN SYSTEMS/JASPER DESIGN AUTOMATION. Belo Horizonte, MG - Brazil.
Tested and debugged a formal verification tool, JasperGold, written in C++. Managed a regression system. Developed Verilog/VHDL designs and Tcl scripts of different complexities for a complete coverage of the tool. (Python, C++, Tcl, Bash, Verilog, VHDL, Mercurial, Jira, Formal Verification).

Academic Experience

03/2018-7/2018 **Research Intern, undergraduate thesis**, LACSED, UFMG. Belo Horizonte, MG.
Designed the architecture and developed an efficient Open Source C++ library for DES, Automata and Supervisory Control supporting computing on GPU (OpenCL) and CPU (OpenMP, optional), with respective automated tests. (C++14, , CMake, CLANG, GCC, Valgrind, Parallel Algorithms, GPGPU, Automata Theory, Supervisory Control, Expression Templates).

03/2010-8/2012 **Research Intern Fellow**, CORO, UFMG. Belo Horizonte, MG.
Developed a calibration method for gyroscopes and accelerometers of an IMU – Inertial Measurement Unity – using an industrial robot. I also developed an C++ application to control the robot on real time, collect the data, and execute an offline optimization. CNPQ provided a scholarship and funds for this project. (C/C++, RTAI, Matlab, Bash, genetic algorithms, robotics kinematics).

Education

08/2009–12/2014
03/2018–07/2018
Bachelor's degree of Control and Automation Engineer, *Federal University of Minas Gerais (UFMG).* Belo Horizonte, Minas Gerais - Brazil.
Topics: clDES Library: Parallel Algorithms for Discrete Event Systems on Heterogeneous Platforms. (DES, C++14, Parallel Algorithms, GPGPU, Automata Theory, Supervisory Control).

08/2012–08/2013
Sandwich Integrated Master's in Electrical and Computer Engineering, *University of Coimbra (UC).* Coimbra - Portugal.
Topics: Robotics, Software Engineering, UX and Embedded Systems.

Computer skills

General Applications, Programming Languages and Research Tools. Highlight for: C/C++11/14, PYTHON (NUMPY, KERAS, TENSORFLOW, OPENCV, FLASK), VIM, LINUX, GPGPU, GIT, LaTeX, AWS, GOOGLE CLOUD, AZURE, APACHE PULSAR, OPENCL, OPENMP, GCC/CLANG, CMAKE, TDD, MICROSERVICES, DOCKER, JAVA.

Fellowships

08/2012–08/2013
CNPq Sandwich Graduation - Science Without Borders, *University of Coimbra,* Coimbra - Portugal.

03/2010–07/2012
Institutional Scientific Initiation Scholarship Program (CNPq), *CORO, UFMG,* Minas Gerais - Brazil.

Publications

Conference Proceedings
MOURAO, A.A.A. ; PEREIRA, G. A. S. *Calibração de girômetros utilizando um manipulador robótico industrial* In: Congresso Brasileiro de Automática, Campina Grande, PB. Anais do XIX Congresso Brasileiro de Automática (CBA 12) p. 1863-1869.