Adriano de A. A. Mourão

R&D Software Engineer

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Work Experience

11/2020–present · **R&D Software Engineer**, INSTITUTO DE PESQUISAS ELDORADO. Campinas, SP - Brazil.
Work on feature development and kernel/user space modules for Motorola smartphone (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 DevOps, Microservices, Video Streaming, RTSP).

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

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

04/2014–12/2014 · **QA Intern**, CADENCE DESIGN SYSTEMS. 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 for testing 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), 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.
Created a calibration method for gyroscopes and accelerometers of an IMU – Inertial Measurement Unity – using an industrial robot. Developed a C++ application to control the robot in 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

08/2009–10/2018 **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).

08/2012–07/2013 **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

08/2012–07/2013 ***CNPq Sandwich Graduation - Science Without Borders***, *University of Coimbra,* Coimbra - Portugal.

08/2010–07/2012 ***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.