Maxiwell Salvador Garcia

https://www.linkedin.com/in/maxiwell/
https://ic.unicamp.br/~maxiwell

maxiwell@gmail.com
+55 (19) 98173-0377

Education

- **University of Campinas (UNICAMP)** — Campinas/SP, Brazil
  Graduate Work at the Ph.D. level in Computer Science; — *2012 - 2017*
  Works: Automatic Bug Detector for Computer Architecture Simulators;
  Improving the Energy Efficiency of Android through Compiler Techniques.

  Masters in Computer Science; — *2009 - 2011*
  Thesis: A Dynamic Compiled Simulator for ADL ArchC.

- **Western Parana State University (UNIOESTE)** — Cascavel/PR, Brazil
  Bachelor of Computer Science; — *2004 - 2008*
  Thesis: VIPRO-MP - A Virtual Prototype for Multiprocessor Architectures in C++.

Skills Summary

- **Languages and Platforms**: C/C++, Python, Shell Script, GNU/Linux, Android, PowerPC, ARM, x86-64
- **Others**: Open-Source Contributor, GIT, JIRA, Github, Jenkins, Gerrit, CI/CD, Kubernetes, Docker

Experience

- **IBM**
  Advisory Software Engineer — *03/2021 - Current*
  - **Library Optimization for OpenPower Systems**: Optimized low-level code (Assembly, C/C++) and developed new features for open-source projects, like Tensorflow, ONNX Runtime, Eigen, and others.
  - **Toolchain and Compiler**: Debugged and helped the toolchain team to fix issues on GCC, LLVM, and GOLD Linker.
  - **CI/CD**: Fixed a lot of bugs in open-source projects to enable CI/CD environments on OpenPower Systems.

  Staff Software Engineer — *12/2018 - 02/2021*
  - **Virtualization**: Fixed the QEMU migration for all architectures when the clocks between the servers (source and target) are out of sync. Developed a new feature on Libvirt to improve the snapshot, saving both active and inactive states in the XML; it allowed the revert process to handle both states properly.
  - **Linux Kernel and Bootloader**: Worked on Linux Kernel and on OpenPower Bootloader (Petitboot) to check if the kernel chosen by the user is able to run over a Secure Firmware (IBM Ultravisor).
  - **Cloud Developer**: Improved the support and created new features for Kubernetes, Openshift, and Container (pods) on OpenPower servers.

- **Padtec S/A**
  Embedded Software Engineer — *04/2017 - 11/2018*
  - **C/C++ Firmware Developer**: Developed firmware for ARM embedded systems, and was involved in board bring-up activities for routers and optical transport systems.
  - **CI/CD**: Created HW/SW unittests and wrote several scripts to automate the build, the integration, and the distribution of firmware; managed both Jenkins and Gerrit tools.

- **Samsung Research**
  Ph.D. Researcher / C++ Compiler Developer — *08/2014 - 03/2017*
  - **Android Compiler**: Improved the energy efficiency of Android systems by applying compiler techniques (e.g. Data-Flow and Control-Flow Analysis) inside the ART (Android Runtime) Compiler to identify resources that were locked but not released.

Academic Projects

- **ArchC Project**: Maintainer and developer of ArchC (www.archc.org), a powerful and modern open-source Architecture Description Language (ADL) in C++. The goal is to provide a tool that allows the designers to rapidly evaluate new ideas in areas such as: processor and ISA design, memory hierarchy, and other aspects of computer architecture research. This project was selected by the Google Summer of Code Program 2016. *(2012 - 2017)*
- **Automatic Bug Detector**: Developed ArchC modules to generate Instruction-Set Simulators (ISS) automatically using modern techniques called dynamic compiled simulation to speed up the performance. Compilers, assemblers, debuggers, and simulators auto-generated may have complex bugs and it's very difficult to find where the bug is. Thus, a new ArchC module was also developed to detect bugs automatically using Dwarf symbols, PIN, Valgrind, and LLVM Tools, running over Intel architecture (host) to simulate PowerPC and ARM (target). *(2010 - 2017)*

Honors and Awards

- IBM Open Source Recognition Program, 2020
- Ph.D. Samsung Research Scholarship, 2014-2017
- Best Paper Award, WSCAD-SSC Conference, 2012
- M.Sc. FAPESP Scholarship, 2010-2011