Custodio, Rommel Garcia

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AT A GLANCE

- Embedded system software developer
- Possesses hands-on knowledge on the use of hardware tools (signal/protocol analyzers, logic probes, oscilloscope and JTAG debuggers), can solder and understand schematics
- **Also** possesses hands-on knowledge on the use of OSS software tools for static code analysis, code formatting, sanitizing and debugging
- **But**, would rather create simple efficient code than debug
- **Always** utilizes the test driven approach to development
- Innate passion to know how things work
- Fast learner and critical thinker
- Possesses a Bachelor's degree in Mathematics (majoring in Computer Science)
- Capable of working independently as well as part of a team
- Does not need an IDE to get work done, give me vi/vim/neovim and ksh
- **work is play** attitude ever since graduating from university
- **In my spare time I**: code, study/learn, tinker, read, explore, break things (*sometimes*)

GOALS

- Apply my **experience** and **expertise** to new technology domains
- Use the latest tools and techniques to implement efficient, safe and secure systems that will benefit society
- Be able to contribute to open source projects to ensure the growth and continued adoption of OSS by the community

SKILLS, EXPERIENCE

- Specialties: Embedded software and real-time systems, Operating systems, Test automation, Board bring-up, Bare-metal embedded development, Traditional Machine Learning, Open Source Software (OSS),
- Operating Systems: **Linux** (Ubuntu, Arch Linux, Alpine Linux, chroot), OpenBSD, Windows (WSL/WSL2),
- Programming Languages: **C** (25+ years) / **Modern C++** (5+ years), **Python** (5+ years), **Rust** (1 yr, self-study), **Haskell** (1 yr, self-study),
- Version Control System: **git** (10+ years), **CVS**, **GitLab**, **GitHub**, Perforce,
- Virtualization/Emulation: **Docker**, **QEMU**,
- General tools: vi/vim/neovim, grep/ripgrep, sed, awk, Korn Shell, make, cmake, gcc/g++/gdb, clang/clang++/lldb, clang-format, clang-tidy, cppcheck, valgrind/memcheck, ghc/ghci, cargo/rustc, Codeium, GitHub Actions, GitHub CodeSpaces, VS Code (Live Share), Google Test, Google Benchmark, Compiler Explorer aka godbolt.org,

WORK EXPERIENCE

Kyocera Document Solutions Minatomirai Research Center, Yokohama, Japan
I transferred to Japan, company renamed and moved to Yokohama

- Software Engineer, Research & Development 2008 – present
  - Successfully converted PoC scripts (small, <1 KLOC, duck-typed scripting language) to C++ (modern C++ is only C++11 in this case because of integration requirement ... two dreaded words, legacy code).
  - Successfully integrated Python code to C# using (**PythonNET**).
  - Successfully implemented an automated data acquisition/scraping system in Python, and later converted to Rust as a proof-of-concept and programming practice.
  - Successfully implemented an on-premise automated integration build and deployment system using **Jenkins**, **Docker** and robotframework.
  - Successfully implemented a chat-based control system for remote automated device power control using **Python**.
  - Successfully converted an internal image comparison system that initially used pixel-by-pixel comparison to use a Traditional Supervised Machine Learning model using **scikit-learn**, **metric-learn**, and **SKLL**.
  - Successfully constructed Compute Engine (GCE) virtual machines on Google's cloud platform for use in Machine Learning investigations.
  - Successfully implemented an image acquisition, analysis and verification system using **Python**.
  - Self-study of **AutowareAuto** course (ROS 2, Foxy) because of my interest is **DDS** (Data Distribution Service).
  - Successfully converted an internal system to use ROS DDS as the data transport subsystem.
  - Ported, implemented and tested Linux-based software written in **C**/**C++** for PowerPC and ARM architectures.
  - Performed successful board bring-up of new platforms using **u-boot**.
  - **Linux** OS kernel maintenance, back-porting latest mainline patches to internal development branch.

- Investigated and fixed reported bugs.

Kyocera Technology Development, California, USA

- Software Engineer, Embedded Systems Engineer 2006 – 2008
  - Ported, implemented and tested Linux-based embedded software written in **C/C++** for printer controllers.
  - Optimized proprietary image pipeline using multi-core processing.

Canon Information Technologies Philippines, Manila, Philippines

- Software Engineer, Technical Lead, Quality Assurance Specialist 1997 – 2006
  - Designed, implemented and tested embedded software written in **C** for printer controllers.
  - Supported the design, testing, bench-marking and conformity certifications of the project.
  - Attended Bluetooth UnplugFest (an international interoperability testing event) organized by the Bluetooth SIG.
  - Monitored discussions of the Printer Working Group (PWG).

EDUCATION

University of Santo Tomas, Manila, Philippines

- BS in Mathematics Major in Computer Science 1994 – 1997
  - Thesis: LUCas Encryption
  - Focus: Implementation of LUC encryption based on a Dr. Dobb's Journal article *LUC Public-key Encryption: A Secure Alternative to RSA* **1993**, public key cryptography.

CONTINUOUS LEARNING

CppCon

CppNow

ACCUConf

MeetingCPP

Udemy

LinkedIn Learning

RIKEN Center for Advanced Intelligence Project (AIP) English Presentations

- RIKEN AIP Youtube Channel

MIT OpenCourseWare

- 6.5940 TinyML and Efficient Deep Learning Computing
- 6.034 Artificial Intelligence

Cornell University

- CS4780 Machine Learning for Intelligent Systems

LANGUAGES

Filipino/Tagalog/English: Native level

Japanese: Greeting level

INTERESTS

old computing/vintage devices, Open Source Software, Operating Systems, Traditional Machine Learning, Efficient Machine Learning, Programming Languages, Secure Programming, Functional Programming