CALVIN LEI-CRAMER

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EXPERIENCE

Wind River Systems ..... *Sep 2019 - Current*
Member of Technical Staff Alameda, CA
Mostly backend on virtual twin containerization, VxWorks RTOS and Boost support, mentor interns

Vessel Assist ..... *Feb 2016 - Sep 2018*
Deck Hand Bethel Island, CA
Practical work experience in small teams focusing on safety, planning and communication

Julie's Strings ..... *Oct 2015 - Sep 2017*
Violin Teacher Brentwood, CA
Taught 6 students of various ages and various skill levels

EDUCATION

Georgia Institute of Technology ..... *August 2021 - Current*
M.S. in Computer Science in Computing Systems

University of California, Davis ..... *Sep 2017 - Jul 2019*
B.S. in Computer Science GPA: 3.72

Los Medanos College ..... *Jan 2012 - May 2017*
Pittsburg, CA GPA: 3.88

Heritage High School ..... *Jul 2011 - Jun 2015*
Brentwood, CA GPA: 4.30

SKILLS AND KNOWLEDGE

Computer Languages	Golang, Python, Bash, Java, Rust, C, C++, Javscript, Matlab, R, TI-BASIC, Lisp, Prolog
Other	docker, kubernetes, REST, HTML, CSS, SASS, socket.io, GitLab CI, Jenkins, git, gdb, make, Ghidra, PIN, opencv, Keras, PyTorch, ROS, Java Swing and AWT, ImGui
Relevant Courses	Malware Analysis, High Performance Comp Arch, Software Engineering, Computer Vision, Compilers, Programming Languages, Algorithms, Machine Learning, Operating Systems
Human Languages	English (fluent), Mandarin (learning), Spanish (a little)
Instruments	Violin, piano

PROJECTS

- Full stack application to run and interact with OS simulations, using socket.io for real-time communication.
- Reverse engineer old Win32 virus. Make Ghidra plugins to generate def-use for each instruction, and data dependence graph. Make PIN tools to generate execution trace and dynamic control dependence graph.
- Created optimizing compiler for simple language targeted for 32-bit MIPS
- Self-driving car research: studied the fundamentals of lane-line detection using computer vision, neural networks, object localization and classification, image segmentation, state estimation using Kalman filter, and PID controllers. Researched state-of-the-art deep CNN based methods for lane-line detection and classical computer vision approaches.

- Project Euler - 135 problems solved since 2017 - example of solved problem: `projecteuler.net/problem=144`
- Created TUI security component configuration for VxWorks RTOS
- Contributed to Department of Defense's Iron Bank program
- Worked in team of 9 to develop map creation tool for a recreation of Warcraft II (1995) game
- Designed 15-bit RISC CPU using Logisim with a Fetch-Decode, Execute-Writeback architecture
- Developed a unix shell that supports background processes, piping, and input/output redirection
- Developed a thread library with TPS, preemption, and semaphores for multithreaded synchronization
- Implemented a FAT-like file system with block-level access to a binary file
- Implemented 32-bit FP calculator using only integer arithmetic in MARS MIPS simulator
- Ported Theseus and Minotaur game to TI-84 Plus using TI-BASIC with little memory and slow CPU
- Implemented a sorting algorithm visualizer in a step-wise sorting fashion for common sorting algorithms
- Implemented the common snake game with ANSI escape sequences to run inside a terminal

HONORS AND AWARDS

- Deans' Honor List Spring 2018, Fall 2017
- Robotics Engineering Technology Certificate of Proficiency
- ROP Student of Excellence Award
- AP Scholar (3+ scores on three or more exams)

PERSONAL INFORMATION / INTERESTS

Taught and played violin in college and high school orchestras, practical wood worker, (re)learning piano currently, love to work on projecteuler.net in free time, as well as exploring around and learning about all aspects of operating systems.