

# Pete Wilcox

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(510) 393-4074

github/LinkedIn: pcwilcox

## EDUCATION

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- **University of California, Santa Cruz** Santa Cruz, CA  
*Doctor of Philosophy in Computer Engineering* Sep. 2019 — Present
  - **Honors:** Eugene Cota-Robles Fellowship
- **University of California, Santa Cruz** Santa Cruz, CA  
*Bachelor of Science in Computer Science; GPA: 3.98* Sep. 2017 — Jun 2019
  - **Honors:** Phi Beta Kappa, *summa cum laude*, Dean's List

## EXPERIENCE

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- **University of California, Santa Cruz** Santa Cruz, CA  
*Graduate Student Researcher* Sep. 2019 — Present
  - **Storage Accelerator:** Ongoing research in collaboration with UCSC Genomics Institute to develop computational storage devices in order to accelerate genome sequence alignment.
- **TidalScale** Los Gatos, CA  
*Kernel Engineer Intern* Summer 2019
  - **Functional Hypervisor Testing:** Designed and built a functional hypervisor test facility using a custom Linux kernel module and device driver.
  - **Model-Specific Register Support:** Utilized hypervisor test mechanism to implement and verify emulation for model-specific registers in the TidalScale hyperkernel.
  - **Virtual CPU Migrations:** Optimized virtual CPU migration algorithms and data structures in order to reduce migration packet size, improve code readability, and optimize maintainability.
  - **VMCS Compatibility:** Developed kernel mechanism for verifying compatibility of virtual machine control structures between servers in a TidalScale cluster.

*Software Engineer Intern* Summer 2018

  - **Server Management Tools:** Developed management, migration, and deployment tools for WaveRunner servers.
  - **WaveRunner:** Worked with large code base in C and Go to identify and eliminate bugs. Implemented version feature enhancement and provided support for internal NAS feature.
  - **Server and Network Admin:** Configured and deployed WaveRunner server clusters; setup and administrated network infrastructure including switches and servers. Collaborated with sales engineers to provide support for customer installations.
  - **Documentation:** Developed and documented best practices for TidalScale Admin Guide.
- **University of California, Santa Cruz** Santa Cruz, CA  
*Assembly Programming Tutor* Jan. 2018 — Jun. 2018
  - **Individual Tutor:** Provide direct assistance to undergraduate students in MIPS assembly and logic circuit design.
  - **Group Tutor:** Demonstrate best practices to beginning students in lab sections by reinforcing lecture topics.
- **Bruce A. Wilcox, P.E.** Berkeley, CA  
*Web Developer, Software Tester* Jun. 2013 – Jun. 2018
  - **Software Testing:** Design and execute application testing procedure for CBECC-Res compliance software.
  - **Web Developer:** Develop and maintain CBECC-Res project website.
  - **IT Support:** Manage project repositories, workflows, and software deployment.

## PROJECTS

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- **Relational Database:** Page-oriented relational database management system using the underlying OS filesystem in order to implement page file, relation, index, and query execution modules. Built in C++ for Database Systems course.
- **Distributed Key-Value Store:** Distributed, fault-tolerant, in-memory key-value store using Docker containers, providing guarantees of eventual consistency, availability for writes, and large storage capacity. Allows easy modification of system configuration at runtime via REST API. Implements full unit test coverage and continuous integration using CircleCI. Developed using Go, Python, and Docker for Distributed Systems course.
- **OC Compiler:** A compiler for the C-like language OC for Compiler Design course. Developed scanner using Flex and parser using Bison. Implemented string tables, symbol tables, and syntax tree generators in C++.
- **Popper:** Open-source CLI tool to make devops tools and workflows more accessible to academic research. Designed and implemented remote badge service feature using Go, Python, Docker, and shell scripts.

## PROGRAMMING SKILLS

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- **Languages:** C, C++, Python, Go, Java, Assembly
- **Technologies:** FreeBSD, Linux, Windows, Git, Docker