Laksith Prabu

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Education

University of California, Berkeley

B.A. Computer Science *May 2025*

- **Relevant Coursework**: Data Structures & Programming Methodology, Discrete Mathematics & Probability Theory, Operating Systems & System Programming, Computer Security, Designing Computer Science Education, Introduction to Artificial Intelligence, Introduction to Digital Design & Integrated Circuits, Field-Programmable Gate Array Laboratory, Introduction to Software Engineering, Programming Languages & Compilers
- **Organizations**: Open Computing Facility (OCF), Computer Science Mentors (CSM), The Algorithms & Computing for Education (ACE) Lab

Experience

UC Berkeley EECS Department Berkeley, CA

Lecturer *June 2023 – August 2023*

- Delivered lectures, designed comprehensive lab excersices & tests, and hired & managed staff of 25+ TAs and Tutors for a class of 400+ students.
- Taught Data Structures & Algorithms in Java covering various topics including OOP & Inheritance, Balanced Search Trees, Time & Space Complexity, Hash Tables, Heaps, Graphs & Search Algorithms and Sorting Algorithms.
- Maintained and developed course infrastructure. Designed and deployed integration between the course forum and internal tools to provide students with real-time office hours wait times, improving student and staff experience.

Open Computing Facility Berkeley, CA

DeCal Head Facilitator *August 2021 - May 2023*

- Developed and updated lab materials for faculty-sponsored, student-run course on Linux System Administration (CS 198-008), on topics such as Shell Scripting, Packaging, Networking, Services, Security, Virtualization, Docker and Kubernetes.
- Transitioned CI/CD to a Docker-based build process on Jenkins, improving reliability. Implemented Slack notifications for failed builds to enhance development workflow.
- Automated provisioning and management of 150+ Student VMs using Terraform and Cloud-init.

UC Berkeley EECS Department Berkeley, CA

Teaching Assistant *June 2022 – May 2023*

- 3-time Teaching Assistant for CS61B (Data Structures and Algorithms), serving 1500 students per semester.
- Held multiple weekly discussions, labs, office hours and assisted students in developing & debugging a variety of creative solutions to complex projects.
- Maintained course software & infrastructure, created & reviewed content, proctored & graded exams, packaged & deployed reference project solutions, and managed course website.

Projects

Hallownest - 3 Node Proxmox Cluster

- Designed, implemented, and maintained a personal 3 Node Proxmox virtualization cluster using repurposed hardware and open-source solutions.
- Hosts a variety of services for classes I've taught, friends, myself and the general web.
- Configured High Availability(HA) and integrated Ceph Storage to establish a fault-tolerant and highly available infrastructure, ensuring minimal downtime and robust reliability.

RISC-V CPU

- Designed and implemented a 3-stage pipelined RISC-V CPU with a UART for tethering.
- Implemented comprehensive testbenches and SystemVerilog assertions to rigorously test and debug the 3-stage RISC-V CPU design, ensuring robust functionality and identifying and resolving potential issues.
- Optimized the CPU by implementing data forwarding, branch predictions and achieved a CPI of 1.12.
- Used Industry Standard tools (Vivado, Synopsys VCS) to identify and optimize the critical path to push the CPU to above 100Mhz.

Skills

Languages: Python, Java, C, Verilog, SQL, Go, JavaScript, TypeScript, OCaml, LaTeX, Assembly, Lisp, HTML/CSS

Tools & Frameworks: Git, Synopsys VCS, iVerilog, AWS, GCP, Unix, Linux, Docker, Heroku, MongoDB, InfluxDB, React, Vue, Express, Flask, Django, pandas, NumPy, PyTorch, MatPlot