

# Justin Williams

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## Education

- University of California, Berkeley** | Electrical Engineering and Computer Science August 2025
- Relevant Coursework: Communication Networks, Computer Security, Data Structures, Machine Structures, Artificial Intelligence, Digital Design & Integrated Circuits Lab, Internet Architecture, Circuits, Physics for Engineers

## Technical Projects

- Secure File-Sharing System** | Go, Cryptography, Systems Design | Berkeley, CA Feb 2025 - Apr 2025
- Designed and implemented an encrypted multi-user file-sharing service, clearly communicating system behavior, threat models, and design decisions to partners—mirroring customer-facing architectural explanations.
  - Translated complex cryptographic workflows into intuitive explanations for peers, mirroring the communication style required when guiding customers through secure product features in practical, real-world scenarios.
- Web Security: UnicornBox Vulnerability Hunt** | SQLi, XSS, AppSec | Berkeley, CA Apr 2025 - May 2025
- Discovered and exploited eight security vulnerabilities (SQL injection, CSRF, session forgery, path traversal), producing clear written analyses and mitigation recommendations—skills essential for customer enablement and solution validation.
  - Presented findings and recommended fixes in a structured report format, demonstrating the ability to convey technical risks to stakeholders of varying expertise in a clear, concise, and impactful way.
- Transport-Layer Protocol (TCP Subset)** | Python, Networking | Berkeley, CA Mar 2025 - Apr 2025
- Implemented core TCP features and articulated how design choices impact latency, throughput, and resource usage, translating low-level protocol behavior into clear explanations that mirrored the customer-facing discussions solution engineers have with both technical and non-technical stakeholders in real-world scenarios and discussions.
  - Analyzed protocol performance under packet loss scenarios, quantifying throughput degradation and recovery times-reliability mechanisms, directly applicable to high-reliability financial transaction systems
- Traceroute & Network Path Discovery** | Python, Raw Sockets | Berkeley, CA Jan 2025 - Feb 2025
- Built a custom traceroute utility by crafting/parsing IP/ICMP packets and manipulating TTL values, adding robust error handling for dropped, duplicated, and malformed packets to map multi-hop network paths effectively and reliably.
  - Created user-friendly documentation describing traceroute output and common failure modes, closely mirroring the clear, structured troubleshooting guides used in customer support and pre-sales engineering workflows.
- 3-Stage Pipelined RISC-V CPU with UART Interface** | Python, Raw Sockets | Berkeley, CA Sept 2024 - Dec 2024
- Designed and implemented a fully functional 3-stage pipelined 32-bit RISC-V CPU (RV32I + CSR) on the PYNQ-Z1 FPGA, building Verilog modules for the ALU, register file, hazard detection, forwarding logic, synchronous RAMs, and memory-mapped I/O while integrating a UART-based BIOS for serial program loading and debugging.
- Phishing Detection Tool Using Machine Learning** | Python, Flask, Google Cloud | Berkeley, CA Dec 2024
- Built a cloud-integrated ML tool that analyzes Gmail messages using heuristic rules and sentiment analysis (Google NLP API); delivered findings through a clean UI and easy-to-understand scoring system for improved clarity.
  - Designed the UI and scoring explanations to make ML-driven results easy for non-technical users to interpret, improving usability and clarity throughout the full system interface and workflow.

## Leadership and Volunteer Experience

- Kesem Camp Counselor** | Summer Counselor | Nevada City, CA Jan 2024 - Present
- Led and facilitated a diverse range of activities for children impacted by a parent's cancer during a week-long camp, fostering a supportive environment that promoted healing and a sense of community among seventy-five campers.
  - Coordinated team-based decisions in dynamic environments, reinforcing collaborative problem-solving used in sales-engineering discovery and demo sessions.
- CSM Mentor** | Instructor for Electrical Engineering and Circuits 1 | Berkeley, CA Aug 2024 - Dec 2024
- Taught and mentored a group of five students, simplifying complex circuit analysis concepts through audience-tailored explanations and reinforcing understanding by adapting teaching methods to each student's learning needs.
  - Cultivated strong technical communication by presenting abstract ideas accessibly, leading to measurable student performance improvements and enabling students to approach complex circuit problems with greater confidence.

## Relevant Skills, and Creative Interests

- **Skills:** Python, Java, Go, C++, Git, Cryptography, Networking, Machine Learning (PCA), Secure Systems Design, Web Security, Distributed Systems, Vulnerability Analysis, Threat Modeling, Concurrency / Parallelism
- **Interests:** Author of a weekly Substack newsletter (1 year ongoing); play saxophone (6 years) and guitar (8 months); traveled Europe for 5 weeks; enjoy strength training, reading, and filming creative music videos with friends.