Justin Williams

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Education

University of California, Berkeley | *Electrical Engineering and Computer Science* **August 2025**
- <u>Relevant Coursework:</u> 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-relability 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.