Brian Huang

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Education

University of California, Santa Cruz **Sept. 2021 - Dec. 2024**
BS in Computer Science ***GPA: 3.6***
Relevant Coursework: Network Security (Graduate), Computer Security, Distributed Systems, Advanced Computer Networks, Data Structures and Algorithms, Principles of Computer System Design, Computer Architecture
Activities: President of UCSC Badminton Club, inter-Networking Research Group, Captain of UCSC Ooze Ultimate Frisbee, Computer Network Student Association, Students in Network Engineering

Work Experience

Network Security Research **Santa Cruz, CA**
Undergraduate Network Security Researcher *Sep. 2024 - Present*
- Participated in seminars to discuss past and current Network Security research.
- Collaborated with **Dr. Ramakrishnan (Ram) Sundara Raman** and several PhD students at the University of Michigan in measuring **internet censorship** by fingerprinting open-source DPIs.
- Deployed **Fuzzing strategies (eg. drop, duplicate, fragment, tamper)** on the application layer to middlebox routers to measure levels of censorship and develop ways to circumvent and evade censorship devices.

Tutoring - CSE150: Introduction to Computer Networks **Santa Cruz, CA**
Group Tutor *Sep. 2024 - Present*
- Provided hands-on assistance to students during lab sessions, guiding them through complex networking concepts, lab projects, homework assignments, and test material.
- Conducted weekly discussion sections to reinforce course material, address student questions, and facilitate a deeper understanding of networking topics.
- Collaborated with the TAs and Professor in grading tests and quizzes, offering constructive feedback to help students improve their performance.

Light Links **Santa Cruz, CA**
Software Engineer Intern *Jun. 2024 - Aug. 2024*
- Conducted extensive research on **eBPF** and **XDP** to develop a proprietary protocol for a LiFi-WiFi hybrid solution.
- Deployed code onto BeagleBoard and Raspberry Pi controllers for demos to CEO and investors.
- Utilized **Scapy** and **pytest** to create **unit tests** for verifying eBPF checksum calculations asynchronously using Python's ProcessPoolExecutor.
- Automated **unit tests** with **Scapy** and **pytest** to verify eBPF redirection of packets.

Inter-Networking Research Group (i-NRG) **Santa Cruz, CA**
Undergraduate Software Developer Research Assistant *Feb. 2024 - Aug. 2024*
- Contributed to software development on an Open Source project, NSB, lead by **Dr. Katia Obraczka** and 3 of her PhD students.
- Research and implement real-time simulation queue schedulers to provide lock-step feature for network simulations in ns-3 to create a platform-agnostic application.
- Redesigned and migrated previous queuing systems to integrate **RabbitMQ** API using producer and consumer model.

Projects

Blackboard: Tutor Scheduling App - Personal Project *Dec. 2023 - Jun. 2024*
- Designed and implemented the user interface (**UI/UX**) for an **iOS** app, ensuring a user-friendly and visually appealing experience.
- Developed a backend system using **Firebase**, including database management, API creation, and user login management.
- Spearheaded the creation of all release and sprint plans, adapting **agile** methodologies to optimize project timelines and deliverables.
- Authored comprehensive **user stories** and acceptance criteria to guide development efforts and ensure alignment with user needs and business goals.
- Conducted detailed presentations to professor and teaching assistants to provide updates and demonstrate app functionality.

Skills

Programming Languages/Software Tools/Operating Systems
- eBPF, XDP, Scapy, Vagrant, Docker, pytest, Wireshark, Cisco IOS, IPv4/IPv6, TCP/IP, HTTP, OSPF, BGP, React Native, Firebase, C/C++, Python, Linux, Expo Go, Ubuntu, Git, Agile, Scrum, LaTeX, ns3