ALEX ASCH

M.S. Student UCSD

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EXPERIENCE

Software Engineer (Intern → Contractor), Application Security

Centric Software

📅 June 2021 – September 2025   📍 San Jose, CA

- Identified, reproduced, and remediated security vulnerabilities across the Centric PLM (C8) platform.
- Used application security tooling (e.g., Burp Suite) to validate internal and third-party pentest findings.
- Implemented security features including access control improvements and backend hardening.
- Contributed full-stack fixes across Java, JavaScript/TypeScript, and web UI components.
- Worked within Agile teams across multiple product areas and release cycles.

PROJECTS

Trellix Software TLS Analysis

University of California San Diego

📅 June 2025   📍 San Diego, CA

- Utilized bpftrace to capture unencrypted TLS traffic for Trellix security monitoring platform.
- Analyzed captured traffic for user device data being sent over the network to the central server.
- Analyzed terms of service of the platform in relation to similar solutions.

Enhancing KVM Page Eviction: From FIFO to Approximate LRU

University of California San Diego

📅 June 2025   📍 San Diego, CA

- Worked on the shadow page table implementation of KVM to optimize the paging from FIFO to approximate LRU.
- Evaluated paging performance using stress-ng synthetic memory tests, and a real workload of redis-benchmark.
- Gained experience in working with an existing open source codebase.
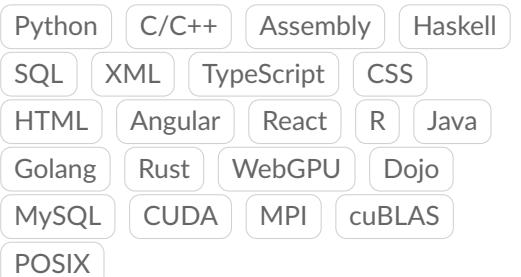
LLM Based Security Framework for Chatbot Agents

University of California San Diego

📅 September 2025   📍 San Diego, CA

- Created an LLM-based framework to precompute required accesses for user prompts to chatbot agents.
- Implemented XML-based stateful reference monitor to restrict access when a prompted agent is being run.
- Analyzed the efficacy of the framework in preventing common prompt injection attacks.

SKILLS

Shell · Wireshark · binwalk · hashcat · ROPGadget · GDB · Ghidra · IDA · scikit-learn · Mininet · Docker · Jira · OpenCV · Burp Suite · bpftrace · mitmproxy · QEMU · stress-ng · KVM · Flamegraphs · Kprobes · Raspberry Pi · Webpack · Node.js · Firebase · Wildfly

Python · C/C++ · Assembly · Haskell · SQL · XML · TypeScript · CSS · HTML · Angular · React · R · Java · Golang · Rust · WebGPU · Dojo · MySQL · CUDA · MPI · cuBLAS · POSIX

LANGUAGES

English ●●●●●

Japanese ●●●◐○

EDUCATION

M.S. in Computer Science
University of California San Diego

📅 Sept 2024 – Ongoing 📍 GPA 3.96/4.0

Graduate Computer Security

Algorithm Design and Analysis

Principles of Database Systems

Principles of Programming Languages

Intro to Embedded Computing

Virtualization and Cloud Computing

Networked Services

Probabilistic Reasoning and Learning

B.S. in Computer Science
University of California Santa Cruz

📅 Sept 2020 – June 202? 📍 GPA 3.85/4.0

🏆 **Graduated Cum Laude**
Awarded to top 15% of graduating class by GPA