Jonathan Oppenheimer

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Education

Purdue University, *BS in Computer Science, Minor in Mathematics and Political Science* **Aug 2021 – May 2025**

- Cumulative GPA: 3.90/4.00, Dean's List and Semester Honors
- Relevant Coursework: Data Structures & Algorithms, Operating Systems, Analysis of Algorithms, Compilers, Computer Architecture, Cryptography, Computer Security, Passwords & Human Auth (grad), Intro to AI, Statistical Methods (grad)
- Activities and Societies: Hack the Future, CERIAS, Purdue Outing Club

Experience

Cisco Systems, Inc, *Distributed Systems Engineering Intern* **May 2024 – Aug 2024**

- Developed a Webex bot to streamline the initiation, monitoring, testing, and analysis of operating system builds for various network switches, merging multiple API endpoints into a unified tool
- Implemented a Retrieval-Augmented Generation (RAG) system using a vector database and Llama 3.1, integrating it with the bot to automate error resolution for failed, large token, logs, creating significant time savings for 25+ engineers
- Consolidated bug tracking and operating system test-suite data in Elasticsearch, creating dashboards to monitor and visualize key metrics

NASA Jet Propulsion Laboratory, *Software Engineer Intern (Caltech JPL-YIP)* **Jun 2023 – May 2024**

- Prototyped new, cloud-based, extract transform load (ETL) pipeline for the Deep Space Network (DSN) Service Quality Assessment subsystem, supporting DSN usage analysis for NASA missions like Mars 2020, and Voyager
- Shifted on-premises scripts, triggers, logging, storage, and more to Amazon Web Services, notably achieving end-to-end performance for an ETL pipeline providing detail on the automatic provision of DSN equipment
- Enhanced error management, data transparency, and throughput to data warehouse while reducing dependencies
- Presented architecture to senior JPL engineers, was retained to upgrade 12 ETL pipelines during the academic year

Space Ground System Solutions, *Software Engineer Intern* **Jun 2022 – Aug 2022**

- Engineered synchronous client/server software packages for a remote ground antenna supporting ADS-B aircraft data
- Implemented all client-server communications and complete command and control of antenna with NASA's GMSEC message architecture; achieved sub 100ms response times for 1500+ mile high-frequency message exchanges
- Developed custom driver for serial communications to an antenna rotator for user control, and real-time satellite tracks

Projects

Hack the Future, *Technical Director* **May 2023 – May 2024**

- **Latino Center for Wellness and Education**, *Developer* **Oct 2022 – Apr 2023**
  - Revamped the Latino Center of Wellness and Education's website in React with a small team, enhancing information accessibility and community outreach
- **Leadership Lafayette**, *Developer* **Oct 2021 – Apr 2022**
  - Co-developed an all-in-one testimonial submission tool for a local nonprofit in an Agile environment
  - Converted design documents into a client-facing page and administrator dashboard, launching site in April 2022

jsh, *Developer* **Mar 2023 – Apr 2023**

- Developed a robust Unix shell as a bash replacement, employing Lex and Yacc for grammar and parsing, and C/C++ for everything from file redirection and signal handling, to piping and an interactive edit mode
- Implemented multiple advanced features like multi-level wildcarding for tab completion, zombie process elimination, automatic configuration sourcing, tilde expansion, multiline input, and environment variables

Mustang Mug, *Lead Developer* **Apr 2021 – Aug 2021**

- Co-led a team in the conception, development, and successful deployment of an online ordering web application for our high school's café, replacing a labor-intensive and inefficient Google form ordering system, streamlining operations
- Integrated MySchoolBucks' API and Firebase for payments and sales reporting; included a user-facing store that wraps point-of-sale system and an administrator configuration dashboard
- Produced user documentation for students and school staff, as well as technical guides for future student maintainers

Skills

Programming Languages: Python, C/C++, TypeScript/JavaScript, Java, PL/SQL, bash, HTML/CSS, Vega
Tools/Technologies: AWS (Glue, Step, Lambda, S3, CloudFormation etc.), React, Svelte, Node.js, Flask, Docker, Oracle Database, Elasticsearch, Firebase, MongoDB, Kibana, git, GitHub Actions CI/CD, Unix

Awards

- Purdue Computer Science Department Kunze ('22) and Boeing scholarships ('23), Eagle Scout