Jonathan Oppenheimer

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Education

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

- Cumulative GPA: 3.90/4.00, Dean's List and Semester Honors
- Relevant Coursework: Data Structures and Algorithms, Compilers, Cryptography, Systems Programming, Computer Architecture, Discrete Mathematics, Linear Algebra, Statistical Methods (Graduate)
- Activities and Societies: Hack the Future, CERIAS, Purdue Outing Club

Experience

NASA Jet Propulsion Laboratory, *Software Engineer Intern* **Jun 2023 – Present**

- Prototyped new extract transform load pipeline (ETL) for the Deep Space Network (DSN) Service Quality Assessment subsystem, supporting DSN usage analysis for missions like the James Webb Space Telescope, Mars 2020, and Voyager
- Shifted on-premises scripts, triggers, logging, storage, and more to Amazon Web Services, achieving end-to-end performance for an ETL pipeline providing detail on the automatic provision of DSN equipment
- Contributed to Oracle database migration, resolved ETL script failures, and developed/documented new tools for ETL deployment

Purdue University – ECE Department, *Instructor of Record* **Dec 2022 – Dec 2023**

- Led a lab section for two consecutive semesters, developed course content, graded homework, and worked with other section instructors to teach Data Science Labs: Calculus to positive student outcomes and evaluations
- Delivered course instruction covering topics such as function sampling and approximation, numerical differentiation and integration, introductory Python programming, and data acquisition with microcontrollers and sensors

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
- Wrote new message format wrappers and documentation for GPS data and antenna pointing angle transfers
- Developed custom driver for serial communications to an antenna rotator for user control, and real-time satellite tracks

Projects

Hack the Future, *Technical Director ('23 – '24)*

↳ **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 algorithmic, multi-level wildcarding for tab completion, zombie process elimination, automatic configuration sourcing, tilde expansion, multiline input, and environment variables

Mustang Mug, *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

- Python, C/C++, Java, JavaScript, PL/SQL, shell scripting (bash/sh), HTML, CSS, LaTeX
- Git, GitHub Actions CI/CD, AWS, React, Svelte, Oracle Database, Docker, Firebase, Flask, Node.js, Unix

Awards

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