Cameron Simmons
Software Engineer

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TECHNICAL SKILLS

General: Javascript ES6+, Typescript, CSS/SASS, HTML, Git, JIRA, Webpack, Babel, MATLAB, Zemax, Excel
Frontend: React (hooks), React Router, Redux
Backend: Node.js (Express), REST APIs, SQL, NoSQL, Deno, Oak, GraphQL, Redis, ReactDOMserver
Testing/CICD: Jest, Enzyme, Supertest, Rhum, Travis CI, Docker, AWS (EC2, EB, S3, RDS)

EXPERIENCE

OBSIDIAN (open source) | *GraphQL caching library for Deno runtime*   *2021 - Present*

- Utilized Deno runtime for backend logic enabling native Typescript support, leaner package management and better security by default than Node.
- Employed custom React hook to enable GraphQL queries and mutations along with client or server-side caching in the app with Redis server which resulted in two orders of magnitude query response time reductions for optimal user experience with minimal interaction delays.
- Developed support for GraphQL variables and directives allowing full utilization of GraphQL features for more efficient and dynamic querying.
- Created a security component that limits GraphQL query depth in order to prevent specific DoS attacks and ensure continuous site availability.
- Utilized the Rhum testing library for Deno to implement test driven development in order to create intuitive semantic unit assertion tests that guarantee new component functionality, improve maintainability of codebase and ensure future changes to the codebase are non-breaking.
- Employed Typescript interfaces and custom types to enforce static type error handling which ensured scalability and minimal development errors.
- Harnessed Oak, React DOM Server and Redis to enable server-side rendering for rapid page loading and client and server caching.
- Used Travis CI along with AWS EC2, EB and S3 to implement continuous integration and automated testing for reliable production deployment.

BON VOYAGE (open source) | *Full-stack application for tracking vacation highlights for later review*   *2021*

- Implemented React Router SPA to establish static routes between multiple components and modals which decreased the frequency of server calls and improved the application loading performance which ultimately delivered a more seamless and dynamic user experience.
- Implemented PostgresQL database to store relational user data with ACID compliance and strict schemas for improved data reliability.
- Used Express/Node.js server to efficiently facilitate responses from client HTTP and API requests with the appropriate information from the database or API URIs with non-blocking execution and NPM ecosystem support for fast response times and improved application interactivity.
- Utilized Enzyme and Supertest libraries along with the Jest test runner and assertion library to create semantic React component unit tests and HTTP integration tests that ensure production code is reliable and easy to maintain and update by future engineers.

DREAMKEEPER (open source) | *Full-stack application that trains a user to lucid dream*   *2021*

- Utilized React to implement a single page application with reusable components and Flux architecture, maximizing maintainability and modularity by separating stateful and presentational components and enforcing one-way dataflow.
- Used Webpack and Babel to bundle modules based on a dependency graph, transpile languages into browser readable code, and uglify and minify code so that it is compatible with the largest subset of potential clients and deployed in smaller files that are more quickly transferable.
- Implemented a NoSQL database for persistently storing data with flexible schemas that will quickly accommodate evolving data requirements.

THE INNOVATION LABORATORY | *Data Scientist*   *2019 - 2021*

- Wrote Matlab algorithms to detect Mountain Wave Turbulence within data obtained from aircraft altimeters and airspeed indicators in order to quickly visualize efficacy of algorithms and adjust them as required to achieve dependable characterization of the turbulence we were seeking.
- Devised Matlab algorithms to integrate turbulence data into geographic contour plots of Mountain Wave Turbulence that were able to then reroute aircraft to avoid the turbulence and prevent the potential airplane and passenger damage that may result.

COHERENT INC | *Staff Optical Engineer*   *2012 - 2021*

- Utilized Zemax optical modeling software to design and characterize laser subsystems that met or exceeded optical specifications in a cost-effective and manufacturable manner so that the system could be transitioned into production and built with minimal additional engineering support.
- Created custom Zemax .ZML macros to perform calculations on metrics regarding laser beam shape and size resulting in closer correlation of optical models to lab-measured results which ultimately saved substantial time and money on expensive rounds of additional prototyping.
- Used Matlab to manipulate data measured on laser systems to gain a better understanding of product performance and optimize design iterations.

ACADEMIA

UNIVERSITY OF WASHINGTON | *M.S. ELECTRICAL ENGINEERING*   *2012*

- 3.84 GPA, Graduate Research Assistant, designed and built optical tweezer array with YVO4 laser and spatial light modulator for bio research.

UNIVERSITY OF ARIZONA | *B.S. OPTICAL SCIENCE AND ENGINEERING (Minors: Mathematics and Electrical Engineering)*   *2010*

- 3.73 GPA, Undergrad Research Assistant, Assisted development and characterization of tunable VECSEL lasers for sodium guide star applications.

TALKS | **@Single Sprout Tech Talks 2021:** Intro to GraphQL
ARTICLES | Medium Launch: Obsidian 3.1
PORTFOLIO | https://cameronsimmons.netlify.app

OTHER INTERESTS | Pop/electric/folk music recording and production in my home studio, Mountain Biking on Mt. Hood and traveling to new countries to learn about other cultures and eat delicious new foods.