Cole Carley

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Education

University of Nevada, Reno	*May 2025*
B.S. in Computer Science Engineering, Minor in Mathematics	Reno, Nevada

Experience

Full Stack Software Engineer	*August 2023 - August 2024*
Alcomy	Orem, Utah

- Led the development of a real-time in-app messaging system using WebSockets for the assisted living industry
- Engineered a report builder and PDF generator to allow users to create and save reports based on their preferences
- Refactored key features, reducing technical debt and improving maintainability, decreasing bug reports by 20%

Full Stack Software Engineer Intern	*May 2023 - August 2023*
Alcomy	Orem, Utah

- Collaborated with a small team of developers on a mobile and web application using Angular17 and FeathersJS
- Integrated with Playwright, enabling integration testing for early error detection in our CI/CD system

Full Stack Software Developer	*June 2022 - June 2023*
Connect Data Solutions	Las Vegas, Nevada

- Architected a web application to manage timeshare presentation appointments, modernizing a legacy solution
- Developed RESTful APIs in NodeJS, allowing access to the Claris FileMaker Pro database
- Enhanced platform security and user management through integration with Google's Firebase Authentication
- Refactored database schema, optimizing performance and decreasing query response times by over 1000x

Projects

The Bird Programming Language	*August 2024 - Present*

- Led a team of 4 in the implementation of a statically typed, compiled language targeting WebAssembly
- Focusing on JavaScript interoperability, this language aims to change web-based computing.
- Refactored our testing framework, doubling our test coverage and decreasing our build time by 50%
- Developed the memory layout of the heap and garbage collector to ensure safe dynamic memory allocation

Robotics Programming Language	*August 2024 - December 2024*

- Designed and implemented an interpreted programming language to specify dynamic hierarchical task trees, enabling developers to describe and parameterize tasks efficiently
- Collaborated with the University's Robotics lab design and functional requirements

Toy Firewall	*April 2024*

- Developed a small firewall in C to block ICMP messages
- Utilized netfilter to extend the Linux network stack by creating a dynamically loaded Linux kernel module

Huffman Data Compressor	*September 2023*

- Implemented the Huffman Coding algorithm in Go to compress English Text, reducing file sizes by 40%.
- Designed a custom serialization format for flexible decompression

Skills

Languages: C/C++20, Python, TypeScript/JavaScript, HTML/CSS, C#, SQL, Java, Rust, Go, ARM7, WebAssembly
Frameworks: Node.js, React, Angular, Svelte, .NET
Developer Tools: Agile Methodologies, CI/CD, CMake, Github, Linux, Docker, Postgres, Google Cloud Platform
Libraries: LLVM, Binaryen, Netfilter, Lodash, Tailwind, NumPy, Pandas