

# Nathan Brown

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## WORK EXPERIENCE

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### Ally Financial

May 2022 – Present

*Software Development Intern*

*Charlotte, NC*

- **Technologies:** TypeScript, JavaScript, React, Docker, Node, Git, HTML, CSS
- Completely rewrote internal web dashboard from Ember.js to React utilizing API queries to display results in application.
- Rewrite included complete visual redesign and development of many additional features with a focus on modularity, performance, and DRY programming.

### Security and Networking Mentorship

March 2022 – Present

*Mentee*

*Remote*

- Currently participating in virtual security-focused mentorship with active DevOps engineer
- Topics include de-authentication and denial-of-service attacks, AES and RSA encryption, subnetting, DNS, routing algorithms, ISO certifications, GRC, CIA triad, STRIDE model.
- Partnering with mentor to develop Nitrogen, a CSP violation aggregation and visualization tool further described below.

### Clemson University

April 2021 – June 2022

*VR Research Assistant*

*Clemson, SC*

- Led development of a cross-platform mobile VR Grand Canyon exploration simulation. Focus on wide range of target devices, heavy performance optimization techniques, and implementation of new features. Made in Unity.
- Led development of a hospital staff training simulation. Updated deprecated components and dependencies, debugged various pre-existing issues, enhanced user experience. Made in Unity using IBM Text-to-Speech API.
- Successfully negotiated additional project budgeting for new hardware, improving our capabilities and allowing us to target a much wider range of modern virtual reality devices.

### Clemson University

January 2021 – June 2022

*Lead Teaching Assistant*

*Clemson, SC*

- Self-developed automated student submission testing and grading software; Written in Python, integrates with Gradescope
- Delivered labs, assisted students with development and debugging, and grading of various assignments.

## EDUCATION

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### Clemson University, Calhoun Honors College

Graduate Spring, 2024

*Pursuing Master of Science and Bachelor of Science, Major in Computer Science, Minor in Cybersecurity, Senior*

*Clemson, SC*

- Actively pursuing master's degree through accelerated Bachelor-to-Graduate program.
- Honors, 3.79/4.0 GPA
- Competed in the 2020 HelloWorld and 2021 CUHackit Hackathons.
- Formula SAE Chassis Division – Structural and composite optimizations on Impact Attenuator; Automation of various tasks; Utilized software including Ansys Mechanical, SOLIDWORKS, Altair HyperWorks.

## SKILLS & INTERESTS

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- **Skills:** JavaScript, TypeScript, Java, C/C++, Python, C#, Git, MySQL, NodeJS, Amazon RDS, Postman, TensorFlow; Strong debugging, data structures, networking, and object-oriented design skills; Very strong leadership and interpersonal skills; Nearly a decade of experience in self-led learning, projects, and personal improvement in software development.
- **Interests:** Programming; Skiing; Running; Art; Game Development; Hiking; Camping

## PROJECTS

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- **Nitrogen:** In-progress web dashboard with a focus on displaying aggregated content security violation reports; Will soon support full integration with AWS RDS alongside a Lambda-based violation report aggregator.
- **Hydrogen:** Portfolio optimization software, based on historical quantitative analysis of closing stock prices. Retrieves data from Yahoo Finance, optimizes portfolio based on specified tickers, supports customizable backtesting to validate returns.

- **Kano:** An interpreter for the CHIP-8 programming language with full graphics capabilities utilizing C++ and SDL2.
- **MarketBot:** Discord bot written for 2020 HelloWorld Hackathon. Service for users to find and list items for sale.
- **DriveMan:** Google Drive file management. Supports uploading, downloading, copying, moving cloud and local files.

## AWARDS/HONORS

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- Eagle Scout; NYLT Staff
- 2<sup>nd</sup> place in 2019 NCCTM State Fair for “Deriving the Perimeter of Horizontally and Vertically Stretched Regular Shapes”
- Clemson National Scholar Finalist