

Nathan Brown

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WORK EXPERIENCE

Giant Oak

September 2022 – Present

Clemson Fall 2022 Capstone Program

Clemson, SC

- Working in a small Scrum team to improve the Natural Language Processing (NLP) methods used by the named-entity recognition (NER) model within GOSTCrawl, the internal indexer that drives the data behind the GOST platform.
- Focused on model pruning, compression, and distillation methods to improve model speed and memory usage while maintaining the same level of accuracy to improve overall cost efficiency.
- Aiming to deploy GPU training using the Clemson University Palmetto Cluster.

Clemson University

August 2022 – Present

Security Analyst Intern

Clemson, SC

- **Technologies:** Splunk, Proofpoint
- Actively monitoring and responding to security events and notices, identifying incoming security incidents, identifying compromised systems and users, reviewing vulnerability reports, researching and responding to phishing incidents.
- Developing and maintaining internal security automation tools.

Ally Financial

May 2022 – August 2022

Software Development Intern

Charlotte, NC

- **Technologies:** TypeScript, JavaScript, React, Storybook, 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 private security-focused mentorship with active SecOps 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

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.
- IBM Watson In The Watt Artificial Intelligence Creative Inquiry

- 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

- **Skills:** JavaScript, TypeScript, Java, C/C++, Python, C#, MySQL, NodeJS, Amazon RDS, React, 3D modeling, texturing, and rendering with Blender, Autodesk AutoCAD and Inventor, VR development with Unity, Git, TensorFlow, Linux; 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

- **Nitrogen:** In-progress web dashboard with a focus on aggregating and displaying Content Security Policy violation reports. Will soon support full integration with AWS RDS alongside a Lambda-based violation report aggregator.
- **Hydrogen:** Portfolio optimization software utilizing historical quantitative analysis of closing stock prices. Retrieves data from Yahoo Finance, optimizes portfolio based on specified tickers. Supports customizable backtesting on historical data.
- **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

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