

## Work Experience

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### Teaching Assistant, North Carolina State University, Raleigh, NC

January 2025 – Present

- Provided direct academic support to 27 students weekly while assisting 120+ students across 6 sections of the course.
- Held weekly office hours to clarify course concepts, troubleshoot assignments, and improve student understanding.
- Developed a grading automation script, increasing grading efficiency by ~47%, streamlining assessments for TAs and reducing turnaround time.

### Software Manager, R1649 Private Equity Partners, Dallas, TX

August 2024 - January 2025

- Spearheaded AI initiatives to develop models analyzing 1000+ data points, driving data-informed strategic decisions.
- Deployed the company website using AWS Amplify for scalable infrastructure and performance, while configuring backend database functions with AWS EC2 to support efficient data handling and storage for seamless web functionalities.
- Executed secure, scalable authentication protocols using AWS Cognito and NextAuth, streamlining user login workflows.

### Software Lead, R1649 Private Equity Partners, Dallas, TX

May 2024 - August 2024

- Directed front-end development to better the UI/UX experience on the official R1649 website.
- Organized and assisted a team in integrating the NextJS front end to a Flask backend.
- Designed and launched a client-side dashboard for real-time equity tracking, improving transparency and reducing manual reporting time by 50%.

## Education

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Computer Science, B.S., North Carolina State University, Raleigh, NC

August 2023 – May 2026

## Technical Skills

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- **Languages:** Java, Python, C, R, JavaScript, TypeScript, SQL
- **Technologies:** React, NodeJS, NextJS, Numpy, Pandas, Flask

## Projects

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### Chess Analysis

- Developed a chess analysis program in JavaScript, leveraging the Chess.com API to retrieve user games and perform automated analysis.
- Implemented a minimax algorithm to evaluate potential moves to a depth of 3 and determine the optimal choice for maximizing positional advantage.
- Integrated a MongoDB database to efficiently store and manage user information for game tracking and analysis.

### MD5 Encryption

- Designed and implemented an MD5 encryption algorithm in C to hash data into 128-bit digests, ensuring secure data handling.
- Developed the MD5 pipeline by constructing functions for message padding, block division, and cryptographic transformations using bitwise operations and modular arithmetic.
- Optimized performance by reducing hashing time by 15% through efficient memory management and iterative processing.