

# Alex Duncan

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## Education

### Clemson University

Graduation: Dec. 2025

*Bachelor of Science in Computer Science | Minors in AI and Spanish*

**4.0/4.0 GPA**

- Study Abroad: Universidad de Salamanca, Salamanca, Spain (Summer 2024)

## Technical Skills

**Programming:** Python, C++, HTML/CSS, C, Java, SQL, JavaScript/Typescript

**Languages/Technologies:** PyTorch, pandas, NumPy, LangGraph, Neo4j, Git/Github, VS Code, Postman, AWS, Supabase, PyCharm, IntelliJ, Matplotlib, FastAPI

## Experience

### Web Development REU

May 2024 – Aug. 2024

*Clemson University - Recommender Systems Research*

- Developed the study's front end using React, JavaScript, HTML, and CSS, collaborating closely with a team of PhD students to create a user-friendly interface
- Developed a scalable database system that processed 9,000+ movie descriptions supporting high-volume data management using Python and OpenAI.
- Utilized the API backend through FastAPI ensuring seamless integration with the HTML front-end

### Machine Learning REU

May 2023 – Aug. 2023

*Clemson University - US Space Force Research*

- Developed and optimized an ML model achieving 80% accuracy in identifying dangerous near-Earth objects
- Collaborated closely with a team of graduate students utilizing communication skills, PyTorch and TensorFlow for deep learning model implementation and optimization
- Authored a white paper on methodologies, results, and implications of Machine Learning as it relates to NEOs

### Project Manager Intern

May 2023 – Aug. 2023

*Marine Repair Services*

- Designed and implemented strategies to enhance productivity including employee tracking and improved performance reviews, benefiting over 500 employees and optimizing operational efficiency
- Assisted HR in coordinating manager communications and deploying a new safety training program to over 13 branches with the use of Excel and PowerPoint
- Developed a Python script to generate instant reports and streamline decision-making processes

### Information Technology Intern

May 2021 – Aug. 2021

*Charleston County School District*

- Provided over the phone technical support in software, hardware, and other resources for over 6,500 employees
- Installed hardware for a training facility, enabling effective onboarding for 30 new employees
- Handled and resolved over 100 support calls, providing personalized assistance and ensuring user satisfaction

## Projects

### ComicStrip | React, HTML, CSS, Flask, Python

March 2024

- Designed and implemented the frontend with React and CSS, creating a responsive and visually appealing user interface within 36 hours
- Contributed to prompt engineering by adapting API visual outcomes to meet project requirements and experimenting with different approaches to enhance performance

### CS Teaching Assistant LLM | LangGraph, Neo4J, TypeScript

Jan. 2024 – May 2024

- Engineered a Retrieval-Augmented Generation (RAG) system paired with Agent Chaining to achieve a 92% accuracy in answering CS queries with a 250ms average response time
- Implemented Neo4J graph database to efficiently store and retrieve up to 50,000 information nodes and 175,000 complex computer science concepts and their relationships
- Developed a TypeScript frontend interface allowing students to interact naturally with the LLM teaching assistant

## Leadership

### Clemson University Table Tennis Club, President (2025), Vice-President (2024)

Aug. 2022 – Present

*Clemson University*

- Organized 18 club meetings and 4 events while leading the team as Vice-President to provide strategic direction and ensure smooth operations
- Developed Excel-based financial management system reducing administrative time by 60%