

# Troy Conner Allen

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## EDUCATION

### Georgia Institute of Technology

Master of Science, Computer Science

Expected Graduation: Dec 2025

GPA: 3.86/4.00

- Relevant Coursework: Data Structures & Algorithms, Operating Systems, Artificial Intelligence, Machine Learning

### Florida State University

Bachelor of Science, Computer Science

GPA: 3.81/4.00

## EXPERIENCE

### Conduent

Software Engineer Intern

Aug 2024 – Present

Atlanta, GA

- Engineered enterprise LLM platform serving 100+ internal users using Hugging Face Transformers in Python and Go.
- Created Jenkins CI/CD pipeline using Docker, Bash, AWS CloudFormation alongside the DevOps team.
- Developed REST APIs with 99.99% uptime serving 10K+ daily requests using FastAPI and Docker.

### Georgia Institute of Technology

Graduate AI Researcher

Aug 2024 – Present

Atlanta, GA

- Implemented model compression framework reducing LLM inference costs by 75% using Python, C++, and CUDA
- Architected benchmarking dashboard for 15+ model architectures using Next.js, FastAPI, and PyTorch.

### Trideum Corporation

AI/ML Software Engineer Intern

Dec 2024 – Aug 2025

Atlanta, GA

- Designed distributed AI analysis application processing 500K+ files daily with Python, JavaScript, and Docker.
- Built search engine with <100ms latency serving 1K+ users with hybrid RAG/BM25 architecture using Milvus.
- Optimized machine learning pipeline performance 5x using batch processing and distributed PyTorch training.

### Shepherd Center

Machine Learning Engineer Intern

May 2024 – Dec 2024

Atlanta, GA

- Constructed neural network architecture for pressure ulcer prediction across 100K+ records using Python and PyTorch.
- Created feature engineering pipeline processing 500K+ medical images using OpenCV and scikit-learn.
- Established Spring Boot microservice architecture processing 100K+ patient records using Java and PostgreSQL.

### Florida State University

Research Assistant

Aug 2019 – May 2022

Tallahassee, FL

- Secured \$289k NIJ grant by designing analysis framework for 30+ years of data using C++ and Java.
- Accelerated analysis time by 20 weeks developing OCR pipeline for 100K+ documents using computer vision.

## PROJECTS

### LitRA | Python, JavaScript, GPT, Next.js

- Engineered AI research assistant processing 2M+ papers with multi-agent architecture and vector databases.
- Implemented semantic search with 50ms query latency using vector embeddings and ML recommendations.

### GoalDle | Python, TypeScript, CUDA, YOLOv8, FastAPI, React

- Developed computer vision application processing 10K+ videos with CUDA accelerated model training.
- Utilized Hungarian algorithm for soccer player identification with 99% accuracy using custom YOLOv8 fine-tuning.

### Balloc | C++, Assembly, Cache Optimization

- Architected custom memory allocator with 32+ size classes using segregated free lists and boundary coalescing.
- Optimized allocation speed 2x through custom alignment strategies and cache-line prefetching.

## SKILLS

**Programming Languages:** Python, C++, Go, Java, JavaScript, TypeScript, Bash

**Frameworks & Libraries:** PyTorch, CUDA, FastAPI, Flask, Pandas, Selenium, React, Express, Node, MongoDB

**Tools:** Git, Jenkins, Jira, AWS, Docker, Linux, Firebase, SQL, NoSQL, Redis, REST APIs

**Concepts:** Backend Development, Frontend Development, Full-stack Development, Distributed Systems, Software Engineering, Machine Learning, Natural Language Processing, CI/CD, DevOps, Microservices, Database Design, Agile, Networking