Troy Conner Allen

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Education

Georgia Institute of Technology – MS in Computer Science (3.86/4.00 GPA) Expected Dec 2025
Georgia Institute of Technology – MS in Analytics (3.78/4.00 GPA) Aug 2022 – Aug 2024
Florida State University – BS in Computer Science (3.81/4.00 GPA) Jun 2017 – May 2021

Experience

Software Engineer Intern, Conduent – Atlanta, GA Aug 2025 – Present
- Developed ensemble ML models (Random Forest + XGBoost) achieving 94% vulnerability classification accuracy across 500+ enterprise environments for Fortune 100 clients
- Built vulnerability processing pipeline handling 1,000+ daily findings with Python microservices and Redis caching
- Designed REST APIs using FastAPI serving 200+ security analysts with vulnerability metrics and automated alerting

Graduate AI Researcher, Georgia Institute of Technology – Atlanta, GA Aug 2025 – Present
- Built Python framework reducing local LLM inference costs by 60% through quantization, pruning, and tracking

Software Engineer Intern, Trideum Corporation – Atlanta, GA Dec 2024 – Aug 2025
- Engineered distributed AI platform processing 290,000+ files using NLP, PostgreSQL, and CUDA with 12+ Docker microservices and load balancing in Python
- Built query systems serving 50+ analysts with 200ms response times using RAG, BM25, and Milvus vector database
- Improved user search experience by implementing filtering across BERTopic clusters, file types, dates, and authors
- Enhanced BERTopic clustering performance 2x through batch processing with PyTorch and POSIX threading

Machine Learning Engineer Intern, Shepherd Center – Atlanta, GA May 2024 – Dec 2024
- Achieved 93% accuracy in predicting pressure ulcers in spinal cord patients by developing neural network architecture using PyTorch with GPU optimization
- Built real-time clinical dashboard for 400+ patient datasets using machine learning pipelines with scikit-learn
- Reduced prediction API response time 60% by implementing containerized Flask endpoints with Redis caching

Research Assistant, Florida State University – Tallahassee, FL Jan 2019 – May 2022
- Secured $289k grant by designing PostgreSQL schema for 90,000+ crime records and building C++ NLP framework
- Reduced analysis time 20 weeks by developing OCR pipeline processing 10,000+ documents with 99% accuracy

Lead Teaching Assistant, Florida State University – Tallahassee, FL Jul 2020 – Dec 2020
- Achieved 100% student satisfaction rating by developing and grading all C++ coursework for 75+ students

Projects

LitRA | Python, GPT, Llama, Next.js, NLP
- Developed AI literature review assistant capable of processing 2,400,000+ papers with concept mapping interface

Goaldle | Python, OpenCV, YOLOv8, FastAPI, TypeScript, React
- Engineered full-stack Wordle-like app using Hungarian algorithm to blur soccer players, handling 1,000+ users

Memory Allocator | C++, Assembly, Cache Optimization
- Built memory allocator 2x faster than glibc on specific tasks using segregated free lists and boundary coalescing

Skills

Languages: Python, C++, Java, JavaScript, TypeScript, SQL
Frameworks: PyTorch, TensorFlow, CUDA, FastAPI, Flask, React, Docker, Kubernetes
Tools: Git, Linux, AWS, PostgreSQL, MongoDB, Redis, Milvus
Concepts: Distributed Systems, Backend Development, Data Structures & Algorithms, Machine Learning, NLP