

Troy Conner Allen

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Education

Georgia Institute of Technology – MS in Computer Science (4.00/4.00 GPA)	Aug 2024 – Dec 2025
• Coursework: GPU Hardware and Software, Natural Language Processing, Operating Systems, Machine Learning	
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 – Dec 2021

Experience

Software Engineer Intern , Trideum Corporation – Atlanta, GA	Dec 2024 – Present
• Engineered multimodal AI platform processing 290,000+ files using computer vision, NLP, and CUDA with 12+ Docker microservices in Python for government data analysis	
• Reduced hybrid search latency 80% by optimizing Milvus vector database with dynamic IVF and HNSW indexing	
• Enhanced BERTopic performance 2x through multi-threaded batch processing using PyTorch and POSIX threading	
• Built metadata filtering system with exact/fuzzy matching enabling targeted search across file types, dates, etc.	
• Implemented backend LLM streaming reducing query response times 3-4x for improved user experience	

Software Engineer Intern , Shepherd Center – Atlanta, GA	May 2024 – Dec 2024
• Developed neural network architecture for pressure ulcer prediction in spinal cord injury patients achieving 93% accuracy using Python/PyTorch with performance optimization	
• Reduced API response time 60% by implementing containerized Flask endpoints with Redis caching	
• Built real-time clinical dashboard processing 400+ patient datasets using machine learning pipelines with scikit-learn	

Research Assistant , Florida State University – Tallahassee, FL	Jan 2019 – May 2022
• Secured \$289k NIJ research grant by designing database schema and framework for mass shootings analysis	
• Reduced research time by 20 weeks by creating OCR/NLP pipeline in C++ for data extraction with OpenCV	
• Built automated hate speech detection pipeline for Discord communities using fine-tuned BERT models achieving 89% classification accuracy on 50K+ messages	

Lead Teaching Assistant , Florida State University – Tallahassee, FL	Jul 2020 – Dec 2020
• Achieved 100% rating from 75+ students developing C++ curriculum with system-level programming focus	

Projects

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Skills

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