

Aman Singh

US CITIZEN

📞 (678) 427-2112 | ✉ amansingh427@icloud.com | 📱 amansingh427 | in amansingh427

Education

Georgia Institute of Technology

MASTER OF SCIENCE IN COMPUTER SCIENCE

- **Machine Learning**, Specialization

Atlanta, GA

August 2023

Georgia Institute of Technology

BACHELOR OF SCIENCE IN COMPUTER SCIENCE

- **Intelligence & Modeling/Simulation**, Threads

Atlanta, GA

December 2021

Skills

Languages Python, JavaScript, TypeScript, C, C++, SQL, Java, Scala, C#

Frameworks Pytorch, Anaconda (NumPy, Pandas, Matplotlib, SciPy, scikit-learn), Docker, Flask, node.js, PostgreSQL, pgvector, ROS, spaCy, NLTK, Huggingface, llama.cpp, TensorRT, gevent, gunicorn, RabbitMQ

Other skills Large Language Models (LLM), Deep Learning, Statistical Analysis, Natural Language Processing (NLP), Retrieval-Augmented Generation (RAG), Linear Regression, Computer Vision, Reinforcement Learning, Convex Optimization

Experience

Edaptive Computing

MACHINE LEARNING DEVELOPER

Remote

February 2024 - PRESENT

- Utilizing transformer models and Large Language Models (LLMs) in an NLP Server to process large, unstructured documents for various uses.
- Using and finetuning (using LoRA) Llama LLMs to process and store docs and build a RAG chatbot to accurately answer questions from the docs.
- Utilizing embedding models to store text with metadata from uploaded docs in vector databases for similarity search and RAG capabilities.
- Implementing spaCy and NLTK to check for grammatical, syntactical, and vocabulary inconsistencies, given a specific required style
- Building production-ready builds using TensorRT, llama.cpp, RabbitMQ, gevent/gunicorn, node.js, Docker, and Flask after prototyping with PyTorch and Huggingface.

Defense Research Associates

AI RESEARCHER

Beavercreek, OH

August 2023 - February 2024

- Researched how to use LLMs solve math problems, such as finetuning with unique tokenizations
- Brainstormed ways to detect, identify, and track unknown objects in the sky from a video using Vision Transformers (ViT), Graph Neural Networks (GNNs), Reinforcement Learning (PPO), Convolutional Neural Nets (CNNs), and Kalman Filters.

CORE Robotics Lab at Georgia Tech

GRADUATE RESEARCHER

Atlanta, GA

August 2022 - August 2023

- Working under Dr. Matthew Gombolay in the CORE Robotics lab while obtaining my MS CS at Georgia Tech
- Published a paper at RSS on the efficacy of non-expert demonstrations to teach robots via Learning from Demonstration (LfD)
- Programmed a Kinova MOVO robot to serve dementia patients in a hospice setting. Robot observes and plans in environment via ROS, computer vision, and deterministic planning.

Symbotic

DATA ANALYST INTERN

Wilmington, MA

May 2022 - August 2022

- Analyzed thousands of bot data logs to preemptively detect, pinpoint, and prevent 99% of charger faults using Python, Pandas, and Tableau.

Projects

Published RSS Paper

CO-AUTHOR

Published June 13, 2023

- Paper name: [Investigating the Impact of Experience on a User's Ability to Perform Hierarchical Abstraction](#)
- Co-authored a paper published in Robotics: Science and Systems investigating how to correctly instruct non-roboticist to perform demonstrations for robots to learn via LfD models. Nominated for best student paper in RSS 2023.
- Second author in compilation paper (which also features previous study that this paper followed up on) published in the International Journal of Robotics Research: [Investigating strategies enabling novice users to teach plannable hierarchical tasks to robots](#)

Anomaly Detection for Cyber-Physical Systems

CONTRIBUTOR

Spring 2022

- Deep Learning final class project for detecting cyber attacks in cyber-physical systems using Tensorflow and Pytorch.
- Worked on using a transformer that predicts a sequence and compares to actual sequence to determine whether attack took place.
- 95% accuracy on a dataset of over 100,000 entries.

Awards & Recognition

Eagle Scout

BOY SCOUTS OF AMERICA

December 2017

- Built a 45-foot long Stone Pathway in Autrey Mill Nature Preserve in Johns Creek, GA

Clubs & Hobbies

Martial Arts

PARTICIPANT

- Trained with Georgia Tech boxing for 2 years, competed in amateur fights
- Currently training in Muay Thai, planning to spar soon

Music

CREATOR

- Adept at guitar, piano, synthesizers, drums, and tuba. Currently learning to sing
- Played Tuba in marching band for five years, section leader for two years
- Home producer, makes hip-hop, hyperpop, electronic, and hard rock songs with vocals using Logic and Ableton