# Aman Singh

US CITIZEN

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

## Education

**Georgia Institute of Technology**　　　　　　　　　　　　　　　　　　　　　　　*Atlanta, GA*
MASTER OF SCIENCE IN COMPUTER SCIENCE　　　　　　　　　　　　　　　　　　　*August 2023*
- **Machine Learning**, Specialization

**Georgia Institute of Technology**　　　　　　　　　　　　　　　　　　　　　　　*Atlanta, GA*
BACHELOR OF SCIENCE IN COMPUTER SCIENCE　　　　　　　　　　　　　　　　　*December 2021*
- **Intelligence & Modeling/Simulation**, Threads

## 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, Natutral Language Processing (NLP), Retrieval-Augmented Generation (RAG), Linear Regression, Computer Vision, Reinforcement Learning, Convex Optimization

## Experience

**Edaptive Computing**　　　　　　　　　　　　　　　　　　　　　　　　　　　*Remote*
MACHINE LEARNING DEVELOPER　　　　　　　　　　　　　　　　*February 2024 - PRESENT*
- Developing NLP services that combine new LLM capabilities such as agentic AI, semantic search, and RAG along with classic NLP such as parse trees and tagging.
- Fine tuning using LoRA techniques to improve LLM performance for specialized tasks.
- Creating a production-ready, AI-equipped product for uploaded documents to be parsed and talked to via a chatbot.

**Defense Research Associates**　　　　　　　　　　　　　　　　　　　　　*Beavercreek, OH*
AI RESEARCHER　　　　　　　　　　　　　　　　　　　　*August 2023 - February 2024*
- Researched novel solutions to various problems, both defense related and otherwise.
- Looked into how to use modern machine learning models to solve problems such as bipartite graph matching (the assignment problem), math and problem solving with LLMs using unique token manipulation techniques, and real time vision trackers.

**CORE Robotics Lab at Georgia Tech**　　　　　　　　　　　　　　　　　　*Atlanta, GA*
GRADUATE RESEARCHER　　　　　　　　　　　　　　　　　*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**　　　　　　　　　　　　　　　　　　　　　　　　　　　*Wilmington, MA*
DATA ANALYST INTERN　　　　　　　　　　　　　　　　　　　*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