Aman Singh

US Citizen

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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), PostgreSQL, pgvector, ROS, spaCy, NLTK, Huggingface

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 an NLP Server which features similarity search, content scanning, recommendation, and generation for uploaded documents
- Utilizing vector databases, computer vision, LLMs, NLP libaries such as spaCy and NLTK, and transformer encoders to parse, search through, and summarize documents.
- Implementing a chatbot for NLPSERVER using an LLM equipped with RAG to easily query for and ask questions about uploaded documents.

Defense Research Associates *Beavercreek, OH*
AI RESEARCHER *August 2023 - February 2024*
- Researched how to use LLMs solve math problems, such as finetuning with unique tokenizations
- Worked with various state of the art transformer and vision models to tackle tracking problems in defense.

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 having non-experts provide demonstrations to to teach robots via Learning from Demonstrion (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 and manipulated thousands of bot data logs to improve bot performance using Python, Pandas, and Tableau.
- Collaborated with a team of engineers to create tools to preemptively detect, pinpoint, and prevent 99% of charger faults.

Chatham Financial *Remote*
FULL STACK SOFTWARE ENGINEERING INTERN *June 2021 - August 2021*
- Created an app using .NET Core MVC Services that pulls data from internal gRPC services and external APIs to process swap option volatilities
- Developed frontend capabilities using React/Redux to display and visualize market data in a 3D plot using Plotly.js

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.

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