

TRISTAN PEAT

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EDUCATION

GEORGIA INSTITUTE OF TECHNOLOGY, College of Computing

Atlanta, Georgia

Master of Science in Computer Science, Machine Learning

May 2025

Bachelor of Science in Computer Science

May 2024

- Concentrations: Artificial Intelligence and Distributed Systems

GPA: 3.84

TECHNICAL SUMMARY

- **Languages/Frameworks:** Python – expert, Pytorch, Git, Tensorflow, SQL, Apache Spark, C, Java
- **Services:** AWS Bedrock, AWS Sagemaker, AWS S3, AWS Lambda
- **Models:** Vision Transformers (ViT), YOLO, UNet, Stable Diffusion, InceptionNet, Segment Anything, HoltsWinter, RF

EXPERIENCE

AMAZON WEB SERVICES, IAM APIAuth Team

Denver, Colorado

Software Development Engineer Intern

May 2024 – August 2024

- Architected an operational metrics analyzer to statistically detect anomalies, retrieve related deployments, tickets, and system logs, and publish a report to an internal Wiki page
- Developed, tested, and deployed a new Python package using AWS Lambda within a CICD pipeline
- Designed and conducted experiments evaluating the root cause analysis capabilities of LLMs given time series data snapshots and related deployments, tickets, and logs as context
- Performed feature selection and compared AD algorithms, such as Holts Winter and RandomCutForest, in Sagemaker

GEORGIA TECH RESEARCH INSTITUTE, Performance Optimization Team

Atlanta, Georgia

Machine Learning Research Assistant

January 2023 – May 2024

- Implemented a monocular depth estimation model using a simplified ViT scoring <5% MAE at 1000m
- Programmed an evaluation script that bins model errors on KITTI and a custom dataset at each depth range
- Led the design of a data loader that pulls videos from S3 and creates masks using the “Segment Anything” model
- Improved the efficiency of an object tracking ViT by >15FPS using a DINO encoder, FlashAttention, and token merging

ZILLOW GROUP, Artificial Intelligence Division

Remote

Software Development Engineer Intern

May 2023 – August 2023

- Designed and implemented a data pipeline in Python and SQL to report digital traffic to Wall Street stakeholders
- Calibrated user traffic using hypothesis testing to migrate from Google Analytics API to an internal cookie software
- Transformed petabytes of data from raw input to a presentable format using parallel spark jobs executed on AWS
- Performed statistical analysis on data source migration and summarized findings in discussions with stakeholders

DELTA AIR LINES, Simulator Support Team

Atlanta, Georgia

Simulator Engineer Co-Op

May 2022 – August 2022

- Programmed C scripts for automatic flight simulator software updates to reduce man-hour cost by 15%
- Debugged C and FORTRAN programs implemented using real-time simulation on Unix-based platforms

HALO COLLAR

Remote

Software Engineering Intern (part-time)

May 2022 – August 2022

- Collected, labeled, and transformed raw data into a model input vector using noise filters and PCA feature selection
- Tuned and trained a multi-class ML activity classifier with 83% accuracy using Python’s scikit-learn
- Converted sliding window time-series preprocessing code and classifier to C to be embedded into a microcontroller

GEORGIA INSTITUTE OF TECHNOLOGY, College of Computing

Atlanta, Georgia

Head Undergraduate Teaching Assistant (part-time)

May 2021 – May 2022

Undergraduate Teaching Assistant (part-time)

January 2021 – May 2021

- Managed seven Teaching Assistants for an introductory Python course
- Wrote and organized lectures, assignments, and exams on data manipulation, I/O, and Big O for 200+ students

PROJECTS

GEORGIA INSTITUTE OF TECHNOLOGY, Graduate Machine Learning

Atlanta, Georgia

MessiAnything Consistency Diffusion Model

June 2024 - August 2024

- Led a team of five in a course project titled “MessiAnything” which segments humans in an image, subtracts them out, and in-paints the negative space with images from Messi
- Architected a custom segmentation model built with a Hiera backbone and a simple feature pyramid network head
- Trained a Consistency diffusion model for 100k iterations and finetuned an ImageNet base model on a custom dataset

ZILLOW GROUP, Hackathon 2nd Place Winner

Seattle, Washington

Internal Resource LLM SlackBot

July 2023

- Conducted prompt engineering and LLM chain experiments to statistically find the optimal question answering algorithm that allows users to interact with Zillow’s internal documentation, Gitlab, and Slack threads

GEORGIA INSTITUTE OF TECHNOLOGY, Vertically Integrated Project

Atlanta, Georgia

Automated Algorithm Design, Stocks Team

August 2022 – Present

- Implemented a Deep RL model for Portfolio Optimization with a custom loss function based on the Sharpe Ratio
- Expanded the capabilities of the NAS branch of the open-source Evolutionary Multi-objective Algorithm Design Engine (EMADE) codebase to support the evolution of unsupervised RL models, inception nets, and RNN modules