(404) 593-7833
barton.austin.t@gmail.com
abarton40@gatech.edu

Austin Barton

github.com/abarton51
linkedin.com/in/austintbarton

EDUCATION

Georgia Institute of Technology Graduation Date: May 2025

Bachelor of Science in Mathematics and Computer Science (GPA: 3.69)

Relevant Coursework:

Natural Language Processing; Deep Learning; Machine Learning; Information Security; Database Systems; Algorithm Design and Analysis; Objects and Design; Information Security; Systems and Networks; Statistical Theory; Data Structures and Algorithms; Robotics; Information Theory; Intro to A.I.; Computer Organization; Probability Theory

SKILLS

Programming Languages: *Proficient:* Python, Java, SQL, C. *Familiar:* Rust, C++, TypeScript, Assembly (x86), Bash, R.
Libraries, Frameworks, Etc.: yTorch, Scikit-learn, NumPy, Pandas, PySpark, Matplotlib, SciPy, Keras, LangChain, Seaborn.
Cloud Computing: Amazon/AWS - DynamoDB, Lambda, S3, Glue, IAM, Cloudwatch, Redshift, Step Functions, AWS CDK.
Data Science: Deep Learning, Machine Learning, Natural Language Processing, RAG, Computer Vision, Statistics, Generative AI.
Computer Systems: GNU/Linux, Memory Hierarchy, Low-level debugging (GDB), Build Systems (Make, Cargo), Network Protocols.
Misc.: VCS (Git), Containerization (Docker), Computer Systems, Databases, Data Structures, Algorithms, OOP/OOD, Agile, CI/CD.

WORK EXPERIENCE

AMAZON WEB SERVICES (AWS) | Software Engineer Intern Bellevue, WA | May 2024 - Aug 2024

- Designed, implemented, and deployed an ETL (Extract, Transform, Load) data integration process for the Business Intelligence of an AWS service using cloud infrastructure for automated workflows, enhancing the reliability and accuracy of business metrics by integrating 35% of previously unaccounted customer scenarios.
- Implemented a robust dependency mocking framework, enabling the simulation of Coral service dependencies with dynamically generated test data, leading to more comprehensive integration tests.
- Leveraged AWS Cloud Development Kit (CDK) to automate the provisioning, deployment, and management of cloud-based resources and services, streamlining infrastructure processes.

UNITED STATES MARINE CORPS | Infantry Assaultman (E-5) Camp Lejeune, NC | Oct 2016 - Oct 2020

- Led, mentored, and collaborated with a team of 12 Marines to prioritize mission accomplishment under hazardous working conditions in support of riflemen for numerous operations and two deployments.

RESEARCH EXPERIENCE

VERTICALLY INTEGRATED PROGRAM (VIP) | Student Researcher Atlanta, GA | January 2024 - May 2024

- Researching datasets for benchmarking LLMs' abilities to identify SEC violations given a scenario description.

RESEARCH EXPERIENCE FOR UNDERGRADUATES | Researcher Raleigh, NC | May 2023 - Aug 2023

- Researched parameter estimation and modeling at the NSF and NSA sponsored research program hosted by NC State University. Implemented Physics-Informed Neural Networks and equation learning techniques in Python using PyTorch to infer a system of differential equations for an agent-based model with adaptive behavior.

PROJECTS

MAMBA VS TRANSFORMER BASED RALMS CS 4650, NLP, Georgia Tech | Jan 2024 - May 2024
Analyzed performance of retrieval augmented language models (RALMs) with Mamba and Transformer based architectures for knowledge intensive tasks over increasing number of retrieved chunks.

SINGLE-SHOT HYPERSPECTRAL DEEP DECONVOLUTION CS 4644, Deep Learning, Georgia Tech | Aug 2023 - Dec 2023
Enhanced hyperspectral images by mitigating distortions inherent in snapshot acquisitions by leveraging blind deconvolution with a U-Net. Demonstrated models capable of deblurring and restoring spectral information.

EXPLORING MUSIC CLASSIFICATION CS 4641, Machine Learning, Georgia Tech | Aug 2023 - Dec 2023
Led a group project on exploring methods in music classification over two distinct datasets. Created a framework in Python for audio data processing, dimensionality reduction, and various supervised learning methods.

BIRD CLASSIFICATION WITH CNNS MATH 4210, Math of Data Science, Georgia Tech | Jan. 2023 - May 2023
Built and trained multiple CNN models in Python which resulted in achieving up to a 95% test accuracy on an image classification task for a dataset consisting of 88,000 images of 515 distinct bird species.

AWARDS

Academic Awards
Edith Nourse Rogers STEM Scholar
John and Susan Traendly Scholar
Zell Miller Scholar

Military Awards
Certificate of Commendation
Meritorious Promotion
Good Conduct Medal