

GAVIN BARRO

Graduate Student | Software Engineer | Data Analyst

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SUMMARY

As a graduate student at Virginia Tech, I'm driven by a passion for using technology to address real-world challenges. My studies have given me a strong foundation in areas like Artificial Intelligence, Software Engineering, Machine Learning, Database Management, and Web Development. Alongside this, my involvement in research and personal projects has enabled me to put these skills into action in practical and impactful ways.

EXPERIENCE

Software Developer & Data Analyst Org Data Solutions

 06/25 - Present  Remote

- Built responsive interfaces using React, TypeScript, and React DnD with real-time validation and visual feedback for meeting scheduling operations
- Developed RESTful API backend using FastAPI and Python with SQLAlchemy, implementing complex scheduling logic, availability checking, and data validation endpoints
- Designed and optimized SQL database architecture with multi-table joins across ScheduledMeetings, Buyers, Suppliers, and Sessions tables, supporting concurrent scheduling operations
- Created robust frontend-backend communication with TypeScript interfaces, automated data synchronization, and real-time schedule updates across multiple user sessions

Undergraduate Researcher James Madison University

 05/23 - 01/24  Harrisonburg, VA

- Implemented a near real-time land change monitoring algorithm leveraging the Microsoft Planetary Computer platform
- Utilized Python and LandSat satellite imagery to detect environmental changes
- Processed and trained LandSat data using high-resolution Microsoft imagery to develop a quantitative land change score
- Enabled accurate comparison between observed and predicted land alterations
- Applied advanced data manipulation and machine learning techniques using pandas, scikit-learn, and SciPy to preprocess satellite data, build predictive models, and validate results
- Created comprehensive visualizations with matplotlib to illustrate spatial and temporal land change trends

SKILLS



Software Engineering Machine Learning AI Engineering Full-Stack Development
Python Linux Statistics Java Rust Power BI JavaScript Git
Application Development Cloud Computing REST APIs HTML/CSS Docker
PgAdmin React Eclipse JetBrains Web Development SQL/NoSQL R
C/C++ Flask VSCode Parallel and Distributed Systems Ruby PHP

EDUCATION



Master's of Engineering: Computer Science

Virginia Tech

 08/25 - Present  Blacksburg, VA

- Dual Concentration: Data Analytics & AI and Software Engineering



Bachelor of Science: Computer Science

James Madison University

 08/21 - 05/25  Harrisonburg, VA

- Minor: Data Analytics

PERSONAL PROJECTS



Real Time Traffic Prediction Dashboard

A real-time traffic prediction dashboard for NYC, leveraging live and historical data to forecast traffic patterns suggesting optimal routes through interactive visualizations.



QuickBytes

Created a full-stack ordering system for restaurants automating order management, enhancing accuracy, and providing data-driven insights for improved efficiency.



NVIDIA Earnings Sentiment Analyzer

An AI-powered application that extracts and analyzes NVIDIA's earnings call transcripts over four quarters, leveraging NLP to identify management and Q&A sentiment, quarter tone changes, and strategic focuses.



Formula One Logistical Database

Developed a centralized database system enabling approved users to efficiently track and manage the global movement of race equipment and league-owned containers.



Transaction Fraud Detection

Detects and prevents financial fraud using a predictive analytics solution, leveraging diverse classification models and techniques for imbalanced transaction datasets.

CERTIFICATIONS

AWS Cloud Certified Practitioner

Foundational knowledge of AWS cloud services, enabling effective cloud adoption, cost management, and basic architectural best practices