

BILAL ZAKARIA

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EDUCATION

Georgia Institute of Technology

Master of Science in Computer Science, Concentration in Machine Learning

Atlanta, GA

Jan 2025 – May 2027

Middle Tennessee State University

Bachelor of Science in Mechatronics Engineering

Murfreesboro, TN

Aug 2020 – May 2023

EXPERIENCE

Founder & Developer — BlockAugur

blockaugur.com

June 2025 – Present

Remote

- Designed and deployed a full-stack analytics platform delivering real-time and historical insights for the top 100 cryptocurrencies, updating every five minutes, hosted on AWS EC2.
- Engineered Python ETL pipelines to collect and process high-frequency market data into PostgreSQL for statistical analysis (AWS RDS).
- Built RESTful APIs with FastAPI serving advanced metrics including volatility, Sharpe/Sortino ratios, alpha/beta, and correlation heatmaps with Statistical Learning methods (DT, RT, Bagging).
- Developed an interactive React + Tailwind + Plotly frontend for dynamic charting and financial analytics.
- Implemented user authentication with Supabase and deployed on secure AWS cloud infrastructure (EC2).

Software Solution Engineer

Markem-Imaje

June 2023 – Present

Nashville, TN

- Designed and deployed data-centric CoLOS line architectures across manufacturing facilities, enabling automated and traceable data acquisition.
- Built full-stack applications using VB.NET and SQL Server to streamline labeling operations and integrate structured data flows with Oracle and SAP ERP systems, following OOP principles for maintainability.
- Developed ETL pipelines in Python to preprocess manufacturing data for reporting, anomaly detection, and downstream analytics.
- Created SQL-based dashboards, SSRS reports, and Python scripts for generating real-time insights and facilitating root cause analysis across production lines.

Artificial Intelligence Research Assistant

Middle Tennessee State University

Jan 2023 – May 2023

Murfreesboro, TN

- Conducted artificial intelligence research on 3D MRI brain scans using transformer-based models.
- Developed and optimized deep learning pipelines in PyTorch for MRI data analysis.
- Preprocessed large-scale medical imaging datasets to improve model performance and efficiency.

PROJECTS

Project 4-Sight | HTML, CSS, MySQL, PHP, Git

Aug 2022 – May 2023

- Developed an advanced wearable device for the visually impaired with obstacle detection, navigation, and safety sensors.
- Created an IoT platform integrating a website and Arduino hardware, enabling real-time monitoring and control.
- Built a user-friendly web interface (HTML/CSS/JS) and a robust PHP/MySQL backend to support hundreds of concurrent users.
- Implemented embedded Arduino code for seamless communication with the IoT platform.

TECHNICAL SKILLS

Languages: Python, JavaScript, SQL, HTML, CSS

Frameworks: FastAPI, React

Databases: Microsoft Server, PostgreSQL

Libraries: NumPy, Pandas, Matplotlib, Plotly, PyTorch

Tools: Vite, Git, Docker, VS Code, PyCharm, Postman, PM2

Platforms: Supabase