

Darshini Balakrishnan

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Education

George Mason University

May 2026

Masters of Science in Data Analytics and Engineering (GPA: 4.00 / 4.00)

Fairfax, VA

- **Relevant Coursework:** Big Data (Python), Prob & Stat in CS (R), Data Management and Mining (SQL), Introduction to Analytics and Modeling, Data Warehousing, OpenAI

Coimbatore Institute of Technology

May 2023

Bachelors of Technology in Information Technology (GPA: 9.00/10.00)

TamilNadu, India

- **Relevant Coursework:** Data Structures, Object Oriented Programming, Database Management Systems, Computer Networks

Technical Skills

Scripting Languages: Python, R, TypeScript, C

Technologies: React.js, Angular, Flask, TensorFlow, Node.js, AWS, Databricks, SQL, Python (Pandas, NumPy, Matplotlib), R, Excel, Power BI, PySpark, Spark SQL, Git, Gradio, OpenAI, Machine Learning, Google Cloud

Concepts: ETL, Cloud Technologies, Data Mining, Data Warehousing, Data Analysis, Data Visualization, Data Quality, Statistical Analysis, Problem-solving, Project Management, NLP, Data Transformation, Data Ingestion, Data Management

Certificates: AWS Data Engineer Associate, Salesforce AI Certified, Lean Six Sigma

Projects

Grounded Clinical QA | OpenAI, RAG, SBERT, NLP, Gradio

Jan 2025

- **Designed and implemented** a Clinical Question Answering system for a patient portal using OpenAI, RAG, and SBERT to generate accurate, grounded responses from MIMIC-III clinical notes.
- **Integrated** dual-input processing of patient and clinician questions to improve contextual understanding and enhance answer relevance.
- **Deployed and showcased** the system with Gradio, enabling an interactive interface for testing and demonstrating real-world applicability.

Optimizing Fraudulent Transaction Detection | AWS, PowerBI, Databricks, Machine Learning

Dec 2024

- **Leveraged** Databricks for large-scale data processing and AWS S3 for secure, scalable storage in building a fraud detection pipeline.
- **Applied** machine learning models (XGBoost, Random Forest) with SMOTE balancing to achieve high accuracy in detecting fraudulent transactions.
- **Delivered** actionable insights to financial institutions through interactive PowerBI and Shiny dashboards for monitoring and decision-making.

Abalone Age Prediction | R, Shiny, SVM, GBM, Git

- Predicted the age of abalone and the gender of infants using machine learning techniques, comparing the performance of models on original and PCA-transformed data.

Public Library Database Management System | PostgreSQL, PGAdmin

Jan 2024

- **Designed and implemented** a PostgreSQL-based database management system to organize books, magazines, digital media, and member information.
- **Optimized** borrowing and tracking processes by enforcing relational integrity and minimizing data redundancy.
- **Streamlined** library operations with efficient resource management and query handling through PGAdmin.

Vegetable Spoilage Detection | Deep Learning, TensorFlow, CNN, Random Forest

May 2022

- Developed a system to accurately predict the spoilage rate of vegetables using computer vision and physiometric parameters. By analyzing images and relevant data, the algorithm estimated the remaining shelf life of vegetables, reducing food waste and improving supply chain efficiency.

Experience

Tekizma Inc

Jan 2023 – Nov 2023

Product Engineer

Bengaluru, Karnataka

- Designed, developed, and maintained a **scalable analytics platform** for clients including **McKesson** and **Ontada Health**, enabling data-driven decision-making.
- Utilized **Python** for **data processing, and backend development**, ensuring efficient handling of large healthcare datasets.
- Built and optimized **ETL pipelines** using **SQL** across multiple data sources; managed and tuned **SQL/Oracle/databricks databases** to improve performance, reliability, and data integrity.
- Developed **interactive dashboards and reports** using Power BI to visualize key trends, driving actionable insights.
- Implemented **monitoring and optimization strategies** to ensure system scalability, performance, and fault tolerance. Collaborated with **cross-functional teams** to design, code, test, and deploy new platform features, enhancing functionality and supporting advanced **healthcare analytics and machine learning initiatives**.

Additional Experience

George Mason University

Aug 2024 – Present

Graduate Teaching Assistant

Fairfax, VA

- **Guided** undergraduate students in transition, career development, and IT courses, fostering skills in programming, databases, and analytics.
- **Instructed and mentored** students on professional development, including communication, teamwork, and career readiness.
- **Utilized** data and planning tools to design lessons, track progress, and enhance instructional effectiveness.