Abzana Varhath

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PROFILE

Final-year Data Science student with hands-on machine learning engineering and analytics experience. Built production-grade computer vision system achieving 99.47% classification accuracy and healthcare BI dashboards uncovering cost-saving insights from 10,000+ patient records. NPTEL Elite-certified (Top 5% nationally) in Python for Data Science. Proven ability to deliver under competitive pressure through hackathons (Runner-Up TechThrone, 3rd SRM Game-A-Thon). Skilled in end-to-end ML lifecycle: data collection, preprocessing, model training (TensorFlow, XGBoost), validation, and stakeholder communication via interactive dashboards.

EDUCATION

Manikam Ramaswami College of Arts & Science   Madurai, Tamil Nadu
B.Sc. Computer Science (Data Science & Analytics), CGPA: 8.0   *July 2023 – April 2026*
- Relevant Coursework: Machine Learning, Statistical Analysis, Database Management, Data Structures & Algorithms

EXPERIENCE

Web Development Intern   May 2025
APM Kingstrack India Private Limited   *Chennai*
- Contributed to the full Software Development Life Cycle (SDLC) for Trendella, a responsive e-commerce site for a women's clothing brand; participated in requirement gathering, design, development, deployment, and client delivery
- Built dynamic, cross-browser-compatible UI using HTML, CSS, JavaScript, and Bootstrap, achieving a 90+ Lighthouse performance score
- Engineered modular JavaScript components for interactive features including carousels, multi-filter search, and real-time form validation, boosting user engagement
- Collaborated with backend developers in an Agile environment; participated in code reviews and debugging sessions, resolving 15+ functional issues pre-production and maintaining code quality

PROJECTS

SEA-SURE - Smart Seafood Freshness Monitoring System | *TensorFlow, Keras, XGBoost*   Academic
- Built a CNN classifier (99.47% accuracy) and XGBoost regressor ($R^2 = 0.804$) for species and freshness prediction using TensorFlow, Keras, ResNet50, and XGBoost
- Performed ETL-style image preprocessing and augmentation on 10,000+ images using OpenCV and Pandas, expanding training data by 3×
- Conducted feature engineering and ranked features via XGBoost importance; selected top 15 features to reduce inference latency by 25%
- Tuned hyperparameters with GridSearchCV (5-fold CV), improving F1-score from 0.91 to 0.97; evaluated models using ROC-AUC, precision-recall curves, and confusion matrices

Healthcare Data Analysis | *Python, Power BI, Pandas*   TSM Datathon
- Conducted exploratory data analysis (EDA) on patient records to uncover trends in demographics, treatment outcomes, and resource utilization
- Designed and deployed interactive dashboards using Power BI and Python (Pandas, Matplotlib) to visualize 12+ key performance indicators (KPIs) for healthcare administrators

Pothole Detection App (Road Reboot) | *OpenCV, TensorFlow*   CUMTA Project Contributor
- Developing an AI-powered mobile application using OpenCV and TensorFlow for real-time pothole detection, aimed at improving urban road safety and infrastructure monitoring

Technical Skills

Programming: Python, R, SQL, Java, JavaScript, C
Machine Learning & AI: TensorFlow, Keras, Scikit-learn, XGBoost, OpenCV, CNN, Classification, Regression, Hyperparameter Tuning, Feature Engineering, Model Evaluation
Data Analysis & BI: SQL (MySQL, PostgreSQL), Power BI, Tableau, Advanced Excel, EDA, Data Wrangling, ETL, Data Visualization (Matplotlib, Seaborn), Statistical Hypothesis Testing
Tools & Platforms: Git, GitHub, Jupyter Notebooks, VS Code, Agile/Scrum, N8N Workflow Automation, Figma
Databases: MySQL, PostgreSQL, SQLite, RDBMS Design
Familiar With: Flask/FastAPI, MLOps concepts (DVC, MLflow), CI/CD basics, AWS fundamentals, Docker

Hackathons & Awards

TechThrone 2k25 Hackathon – Runner-Up   January 2025
- Led a 4-member team in a 12-hour sprint to build MechConnect, a real-time mechanic-driver matching platform among 50+ teams; earned internship offer and leadership recognition

SRM Game-A-Thon 2025 – 3rd Place   December 2024
- Built an Educational Gamification Platform using React.js among 80+ teams; recognized for innovation in edtech

TSM Intra-College Datathon 2025 – 5th Place   November 2024
- Analyzed healthcare data with Python and Power BI as Team Crazy Coders among 25+ teams

Certifications

Python for Data Science: NPTEL (IIT) Elite Silver Certificate – Top 5% Nationally (2024)
Create and Use Analytics Reports with Power BI: Microsoft (2024)
Database Management System: NPTEL (IIT) (2024)
Basics of R Programming: MRCAS EDGE – Grade A++ (Certificate of Merit) (2024)
Java Spring Framework: Infosys Springboard (2024)
Azure AI Document Intelligence: Microsoft (2024)
English Language Communication: Cambridge via Naan Mudhalvan (2024)