APARNA MATHEW

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PROFESSIONAL SUMMARY

Results-driven Data Scientist with expertise in machine learning and cloud computing. Proven experience in Python programming, database management. Strong background in agile development, test-driven development, continuous integration, and deployment automation with measurable business impact.

TECHNICAL SKILLS

Programming Languages: Python, SQL,R
Web Development: Flask
Machine Learning & AI: TensorFlow, Scikit-learn, Keras, XGBoost, Random Forest, Neural Networks
Deep Learning: CNN, RNN, LSTM
Database Technologies: PostgreSQL, MySQL
Cloud & DevOps: AWS (S3, EC2)
Data Science: Pandas, NumPy, Matplotlib, Seaborn, Statistical Analysis, Data Visualization, Predictive Analytics
Development Tools: VS Code, Jupyter Notebook, Postman, Integration Testing, Debugging

EDUCATION

Master of Science in Data Science 2024 – 2026
Christ University, Bangalore, India — CGPA: 8.6/10.0
Coursework: Machine Learning, Deep Learning, Big Data Analytics, IOT, Statistical Modeling

Bachelor of Science in Mathematics 2021 – 2024
St. Joseph College, Kerala, India — CGPA: 8.73/10.0
Coursework: Statistics, Linear Algebra, Calculus, Probability Theory, Mathematical Modeling

PROFESSIONAL EXPERIENCE

Data Science Intern Seeroo IT Solutions, Kerala, India
Apr 2025 – May 2025

- Developed an NLP-powered chatbot to extract answers from internal PDFs, improving support efficiency by 40%.
- Co-developed a product recommendation system using cosine similarity and feature embeddings.
- Completed a 100-hour internship focused on agile collaboration, user-centric delivery, and real-time problem-solving.

TECHNICAL PROJECTS

SecuraNote Enterprise Security Web Application June 2025 – Aug 2025
Python — Flask — PostgreSQL — AWS S3 — JavaScript — AES-256 — Blowfish — ChaCha20

- Developed a secure full-stack web application with advanced authentication, session management, and enterprise-grade encryption.
- Implemented multiple encryption algorithms (**AES-256, Blowfish, ChaCha20**) for flexible and robust data security.
- Integrated **AWS S3** for scalable storage, hosting, and optimized content delivery.
- Designed modular architecture supporting secure user management, encrypted data storage, and role-based access control.

Football Formation Analysis with ConvLSTM Aug 2024 – Dec 2024
Python — TensorFlow — KMeans — ConvLSTM — Matplotlib

- Developed a deep learning pipeline to recognize football team formations from raw player tracking data.
- Preprocessed data by cleaning, normalizing coordinates, centering around team centroid, and creating sliding-window sequences.
- Converted player positions into rasterized heatmap sequences and applied KMeans clustering to generate pseudo-labels.
- Built and trained a ConvLSTM model to classify formations, achieving high accuracy on test sequences.
- Visualized learned formations by plotting average player positions on a football pitch for each cluster.

CERTIFICATIONS

- Stanford University - Supervised Machine Learning: Regression and Classification (Coursera) - 2024
- AWS - AWS Clouds Foundation
- Microsoft Azure DataBricks for Data Science and Machine Learning - 2024
- Infosys Springboard - Advanced Prompt Engineering for AI Applications - 2024
- Infosys Springboard - Applied Generative AI for Developers - 2024

AWARDS AND RECOGNITION

- Smart India Hackathon 2025 National Participant - AI-Crop Advisory System
- INSPIRE Award Scholar - Department of Science & Technology, Government of India
- Academic Excellence Award - Top 1% National Ranking (99.67% in Higher Secondary)
- Bharat Scouts and Guides (Dwitiya Sopan Badge)

RESEARCH EXPERIENCE

Balancing Security and Usability in Cloud Data Encryption June 2025 – Present
Christ University, Bangalore

- Conducting a comparative study of **AES-256, ChaCha20, and Blowfish** within a user-controlled, adaptive authentication-based cloud data encryption system.
- Analyzing trade-offs between encryption strength, computational efficiency, and end-user usability for secure cloud storage.
- Developing a prototype framework integrating multiple encryption algorithms with adaptive authentication for enhanced data protection.