

# SAYANA M C

## AI/ML Engineer

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### PROFESSIONAL SUMMARY

Motivated AI/ML Engineer with an M.Sc. in Data Science and Analytics and a strong foundation in Mathematics. Experienced in designing, training, and evaluating machine learning and deep learning models using Python, TensorFlow, Keras, PyTorch, and Scikit-learn. Hands-on experience in computer vision, predictive modeling, time series forecasting, data preprocessing, and AI-driven solutions through internships and academic projects. Passionate about building scalable AI applications that solve real-world problems across agriculture, finance, and IoT.

### TECHNICAL SKILLS

**Programming Languages:** Python (Pandas, NumPy, Matplotlib, Seaborn, Scikit-learn, OOP), SQL, R, SAS

**Machine Learning:** Supervised Learning, Unsupervised Learning, Regression, Classification, Decision Trees, Random Forest, Logistic Regression, Linear Regression, K-Means Clustering, PCA, Feature Engineering, Hyperparameter Tuning, Cross-Validation, Model Evaluation

**Deep Learning:** CNN, Neural Networks, TensorFlow, Keras, PyTorch, Transfer Learning, Image Classification, Computer Vision, OpenCV

**AI & Data Science:** Data Preprocessing, Data Cleaning, Exploratory Data Analysis (EDA), Statistical Analysis, Predictive Modeling, Time Series Forecasting, Hypothesis Testing

**Time Series:** ARIMA, Holt-Winters, Forecasting, Stationarity Testing

**Databases:** MySQL, MongoDB

**Visualization:** Power BI, Tableau, Matplotlib, Seaborn, Microsoft Excel

**Tools & Platforms:** Git, GitHub, Jupyter Notebook, Google Colab, Visual Studio Code, Anaconda

### PROFESSIONAL EXPERIENCE

**Data Science & Machine Learning Intern** • Kites Software Pvt. Ltd., Kochi, Kerala Mar 2026 – Apr 2026

- Cleaned, preprocessed, and analyzed large-scale business datasets, enabling data-driven decision-making across multiple departmental workflows.
- Designed and deployed interactive Power BI dashboards and visual reports to communicate KPIs, business trends, and analytical insights to stakeholders.
- Applied supervised and unsupervised machine learning algorithms (regression, classification, clustering) to real-world problems, improving predictive model performance.
- Collaborated with cross-functional teams across a 2-month project sprint to deliver data science deliverables on time and to specification.

**Data Analysis Intern** • Cognifyz Technologies, Bangalore Jun 2025 – Jul 2025

- Performed end-to-end Exploratory Data Analysis (EDA) on structured datasets using Python (Pandas, NumPy, Matplotlib, Seaborn), uncovering critical patterns, outliers, and statistical trends.
- Built interactive Power BI dashboards to translate raw datasets into clear, actionable business insights, supporting informed strategic decisions.
- Developed and validated predictive models using Scikit-learn (regression, classification), applying cross-validation and evaluation metrics (accuracy, precision, recall, F1-score).
- Prepared structured analytical reports summarising data-driven findings and recommendations for cross-functional stakeholder review.

### PROJECTS

**Online Course Pricing Analysis & Prediction** — Python | Power BI | Scikit-learn | Machine Learning

- Conducted market research and survey-based data collection to identify the key features influencing online course pricing across categories.

- Built interactive Power BI dashboards visualising pricing trends, category comparisons, and cost-driver correlations for stakeholder decision support.
- Performed feature engineering and correlation analysis to isolate the top pricing variables, reducing model noise and improving feature relevance.
- Trained ML regression models (Linear Regression, Random Forest) to predict optimal course pricing, delivering evidence-based pricing strategy recommendations.

#### **Gold Price Inflation Forecasting** — *R | Time Series Analysis | ARIMA | Holt-Winters*

- Collected, cleaned, and transformed monthly gold price data into a structured time-series format, followed by exploratory trend and seasonality analysis.
- Validated data stationarity using ADF and HEGY tests to determine the need for differencing before model construction.
- Built and benchmarked ARIMA and Holt-Winters forecasting models, selecting the best fit based on RMSE, MAE, and MAPE performance metrics.
- Engineered a hybrid forecasting model (Holt trend + ARIMA residuals) to generate reliable 12-month gold price forecasts with improved predictive accuracy.

#### **IoT-Based Crop Disease Detection System** — *Python | TensorFlow | Keras | CNN | ESP32-CAM*

- Implemented an end-to-end IoT data pipeline using ESP32-CAM to capture and stream real-time crop leaf images over Wi-Fi for automated disease analysis.
- Built and trained a Convolutional Neural Network (CNN) in Google Colab for multi-class classification of healthy and diseased crop leaf categories.
- Curated and labelled a custom image dataset, ensuring class balance and data quality to support robust model training and evaluation.
- Integrated IoT image acquisition with the deep learning inference pipeline, enabling real-time, automated crop health monitoring at field level.

#### **Drought Impact Detection in Croplands** — *Python | TensorFlow | Keras | Remote Sensing | CNN*

- Developed a CNN-based image classification model to detect drought-stressed croplands from Kaggle remote-sensing satellite datasets using TensorFlow/Keras.
- Applied comprehensive data augmentation (rotation, zoom, shift, flip) and preprocessing (resize, normalise) to enhance model robustness and minimise overfitting.
- Automated the end-to-end dataset pipeline—directory creation, image copying, and class-wise organisation—using Python (os, shutil) for reproducibility.
- Evaluated model accuracy and loss curves to validate performance, achieving reliable drought-stress classification for precision agriculture applications.

## **EDUCATION**

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|------------------------------------------------------------------------------|-------------|
| <b>M.Sc – Data Science and Analytics</b> • Jain University, Bangalore, India | 2024 – 2026 |
| <b>B.Sc (Hons.) – Mathematics</b> • Kannur University, Kannur, India         | 2021 – 2024 |

## **CERTIFICATIONS**

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- Probability Foundations for Data Science and AI [↗](#)
- Data Visualization with R [↗](#)
- Principal Component Analysis with NumPy [↗](#)
- Foundations: Data, Data, Everywhere [↗](#)

## **LANGUAGES**

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English | Malayalam | Hindi | Tamil