

# AKHIL JOSE



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## PROFILE SUMMARY

- **Python Automation Engineer** transitioning into **ML Engineer / Data Scientist**, with hands-on experience in Python, SQL, Tableau, and applied ML projects.
- Nearly **5 years of Python-based software development experience** at Marvell Technologies, building scalable scripts, workflows, and data-driven validation processes.
- Practical experience with **supervised ML algorithms** including XGBoost, LightGBM, GBDT, Logistic/Linear Regression, Decision Trees, Random Forest, KNN, Stacking & Cascading.
- Skilled in **Scikit-learn, Pandas, NumPy**, feature engineering, model evaluation, EDA, and data visualization (Tableau, Matplotlib, Seaborn).
- Strong foundation in **statistics** (hypothesis testing, probability, CLT, confidence intervals) and completed multiple end-to-end DS/ML projects through Scaler's Master's Program.

## EDUCATION

MS in Computer Science (AI & ML) at Scaler Neovarsity, 2024-26 - In Progress

PG Diploma (Embedded System Design) from CDAC, Bangalore, 2019

B.Tech. (Electrical and Electronics Engineering) from Govt. Engineering College, Thrissur, 2017

## CERTIFICATION

- Tableau and SQL
- EDA Fundamentals

## CORE COMPETENCIES

- ❖ Data Cleaning, Preprocessing & Transformation
- ❖ Statistical Analysis & Hypothesis Testing (A/B Testing)
- ❖ Supervised Machine Learning Algorithms
- ❖ Data Visualization (Tableau, Matplotlib, Seaborn)
- ❖ Feature Engineering, Model Evaluation & Validation
- ❖ SQL for Data Extraction, Joins & ETL Operations
- ❖ Python Programming & Scripting
- ❖ CI/CD Pipelines & Deployment Workflows (Jenkins, Azure DevOps)
- ❖ Problem Solving, QA Strategy, Test Planning & Validation Processes

## PROJECTS

### Algorithmic Trading Analysis & ML Signal Prediction

[GitHub] ([https://github.com/akhiljose1995/trading\\_automation/tree/main/new/kite-backtester](https://github.com/akhiljose1995/trading_automation/tree/main/new/kite-backtester))

- **Tech Stack:** Python, Pandas, NumPy, Matplotlib, OOP, KiteConnect
- Built a modular OOP-based backtesting engine for intraday strategy simulation and evaluation.
- Implemented indicators (**EMA, RSI/MACD Divergence, ADX, ATR, BBW**) and custom **candlestick pattern detection** for multi-factor signals.
- Developed reusable modules for portfolio handling, order simulation, PnL tracking, and performance reporting.
- Processed intraday OHLC data for **feature extraction**, candle patterns, and time-series trend analysis using Pandas/NumPy.
- Trained multiple ML models for **price direction prediction** using **10 years of data**; selected **XGBoost** achieving **57% prediction accuracy** with strong **F1 scores ( 62% )**.
- Designed for future real-time trading with seamless KiteConnect integration.

# Business Case Study (as part of the Masters of Science in Computer Science from Scaler Neovarsity)

- **SQL & Data Analysis:** Analyzed **Target's** operational data to optimize business strategies.
- **Data Manipulation:** Extracted insights from **Netflix** customer streaming behavior using **Pandas & Numpy**.
- **Statistical Analysis:** Identified audience segments for **Aerofit** using **Probability & Statistics**.
- **Central Limit Theorem (CLT) & Confidence Intervals:** Examined purchase behavior for **Walmart**.
- **Hypothesis Testing:** Validated business assumptions for **Yulu**.
- **Feature Engineering:** Designed data preprocessing strategies for **Delhivery**.
- **Regression Modeling:** Built **Linear Regression (Jamboree Education)** & **Logistic Regression (LoanTap)** models to derive key business insights.

## TECHNICAL SKILLS

- **Programming:** Python, SQL, Bash, C, PySpark
- **Machine Learning:** Tree-based Models (XGBoost, LightGBM), Ensemble Methods, Regression, Classification, Feature Engineering, Model Evaluation
- **Statistics & Analytics:** Data Analysis, Probability, Hypothesis Testing, A/B Testing, EDA
- **Visualization:** Tableau, Matplotlib, Seaborn, Excel
- **ML Engineering:** FastAPI, Flask, Streamlit, Model Deployment, CI/CD (Jenkins, Azure DevOps)
- **LLMs & GenAI:** Hands-on experience building LLM applications using LangChain, OpenAI API, Prompt Engineering, RAG
- **Testing & Automation:** Pytest, Unittest, Robot Framework
- **Big Data:** PySpark (ETL, DataFrames)
- **Systems:** Linux, Windows, Firmware/SoC Validation

## AWARDS & ACHIEVEMENTS

- Recognized as **Best Employee of 2022** for exceptional performance and contributions.
- Achieved **rapid career progression**, advancing from Associate Engineer to Senior Engineer, and then to Staff Engineer in just four years.

## WORK EXPERIENCE

### March 19 - Dec 23: Marvell Technology, Bengaluru

#### Career Progression:

- March 19 – April 21: Associate Engineer
- May 21 – April 23: Senior Engineer
- May 23 – Dec 23: Staff Engineer

#### Key Responsibilities & Achievements:

- Developed **Python** automation frameworks (**Unittest, Robot Framework**), achieving **90% automation** and reducing execution time by **60%**.
- Automated log analysis and reporting using **Python, Pandas**, and **NumPy**, cutting manual effort by **70%**.
- Used **SQL** queries to analyze NIC performance datasets and support data-driven validation.
- Created **Python** scripts for **data extraction, preprocessing, and visualization** for real-time reporting.
- Built **Python dashboards** to track test metrics and automate defect trend analysis.
- Led validation for **ARM64-based data processing units**, including **ThunderX2 C2050** for Microsoft Azure.
- Executed **performance, networking, and I/O validations** across multiple protocols.
- Performed **firmware and OS validation** (Linux/Windows), identifying critical issues and improving system stability.
- Implemented **CI/CD pipelines** using **Jenkins**, integrating **Python unit tests** for continuous validation.
- Established standardized **test processes** and documentation practices to improve reporting and defect tracking.
- Mentored junior engineers on **Python scripting**, automation practices, and validation workflows.