# Aadip Thapaliya

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## Profile

Data science student with practical experience in machine learning, time series forecasting, and end-to-end model deployment. Strong technical foundation in Python, SQL, and Machine Learning frameworks with proven ability to deliver actionable insights from complex datasets.

## Education

**BSc Digital Business & Data Science** 2024–2027
*University of Europe for Applied Sciences (UE)* GPA: 2.0 Potsdam, Germany

**Machine Learning Degree Program** Present
*opencampus.sh (Christian-Albrechts-Universität)* Kiel, Germany

## Experience

**Machine Learning Research Project** January 2025–July 2025
*Varun Herbal Pvt. Ltd.* Remote

- Conducted research and data analysis on 10,000+ records from weather APIs, soil sensors, and IoT devices to develop sustainable agriculture solutions for crop-yield prediction and irrigation optimization, achieving 10% prediction error through feature engineering and ensemble methods
- Contributed to CNN-based plant disease detection research using 15,000+ labeled images with data augmentation, reaching 85% accuracy and supporting sustainable farming practices through early disease intervention

## Projects

***CLUE – Contextual Likelihoods for User-Centric Evaluation***

- Designed and developed an end-to-end financial forecasting desktop application using PySide6, integrating automatic Yahoo Finance API data download and CSV upload functionality for flexible data ingestion
- Implemented hybrid Auto-ARIMA + XGBoost modeling pipeline with automated hyperparameter tuning, achieving MAE of 12.4 on 20% test split for 30-day forecasts across multiple financial time series
- Applied model explainability techniques (SHAP/LIME) for functional decomposition and automated report generation using ReportLab to produce professional PDF outputs with statistical summaries, forecast visualizations, and confidence intervals

***Advanced Time Series in Finance – Team Project***

- Conducted comprehensive benchmarking study comparing classical methods (ARIMA, SARIMA), machine learning algorithms (XGBoost, LightGBM), and deep learning architectures (LSTM, GRU) on 10–15 years of financial data
- Developed systematic preprocessing pipeline including stationarity tests, detrending, and differencing, coupled with feature engineering (technical indicators, lag features, rolling statistics) to improve model performance by 27%
- Established reproducible evaluation framework with rigorous cross-validation, identified best-performing models per dataset, and documented findings in reusable algorithmic evaluation template

## Technical Skills

**Programming & Databases:** Python, SQL, PostgreSQL
**Data Science Libraries & Visualization:** Pandas, NumPy, Scikit-learn, Statsmodels, Matplotlib, Plotly, Seaborn
**Frameworks:** TensorFlow, PyTorch, XGBoost, LightGBM, CatBoost
**Version Control:** Git (GitHub, GitLab), CI/CD Workflows
**Research & Domain Competencies:** Data Evaluation & Analysis, Research Methodology, Statistical Analysis, Sustainability Research, Environmental Data Analysis, Scientific Documentation
**Core Competencies:** Data Analysis, Numerical Optimization, Data Structures & Algorithms, OOP, DBMS

## Certifications

**Advanced Time Series Prediction** – opencampus.sh: Deep Learning, Stock Forecasting
**Foundational Mathematics for AI** – opencampus.sh: Linear Algebra, Calculus, Statistics, XAI
**Git Training** – Simplilearn | **Python Bootcamp** – Udemy

## Languages

**English:** Fluent (C1) **German:** Beginner (A2)