

# RUDRA MEHUL DUDHAT

## AI & MLOPS INNOVATOR

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### SUMMARY

Data Science & AI student at IIT Bhilai (CGPA: 9.48) with demonstrated ability to build high-impact ML systems. Architected OptiQuant, a quantitative trading platform that generated 161% returns and achieved a 2.73 Sharpe ratio through sophisticated ensemble modeling and time-series analysis. Experienced in full-stack ML deployment with AWS, Docker, and CI/CD automation. Focused on transforming complex data challenges into scalable, production-ready solutions.

### TECHNICAL SKILLS

Programming | Python, Java, C, HTML

Data Analysis | EDA, Pandas, NumPy, Matplotlib, Seaborn, SQL, Time Series Analysis

Machine Learning | Scikit-learn, Feature Engineering, SHAP, Ensemble Methods

Web Development | Flask, Streamlit

DevOps & Cloud | Git, Docker, AWS EC2, AWS Elastic Beanstalk, GitHub Actions

### PROJECTS

#### OptiQuant: AI-Driven Alpha Signal Generator

- Architected a full-stack Machine Learning platform for quantitative trading, leveraging ensemble models (LightGBM, Random Forest, CatBoost) to deliver a 161.05% strategy return, 2.73 Sharpe Ratio, and 63.97% win rate over 272 trading days.
- Engineered advanced time-series features and implemented walk-forward backtesting to ensure robust, scalable performance, achieving a 56.06% Precision@Top 1% and 0.0134 Mean Information Coefficient.
- Deployed on AWS EC2 using Docker, with a Streamlit-powered interactive interface for seamless user analysis of OHLCV data, integrated with model explainability for transparent insights.
- Streamlined development with GitHub Actions CI/CD pipelines, enabling automated updates and modular design for real-world alpha research.

Access the App: <http://13.61.176.157:8501/>

View the GitHub Repository: [Click Here](#)

## 2. FIFA Player Valuation Model with Classical ML and SHAP Interpretability

- FIFA Player Value Predictor
- Developed a Random Forest model to predict football player market values ( $R^2 = 0.9994$ ) using Python, Pandas, and Scikit-learn.
- Engineered 20+ features from text data, avoiding one-hot encoding and removing data leakage for generalizability.
- Applied SHAP for global and local explainability, highlighting key feature impacts.

## CERTIFICATIONS

### BCG Data Science Job Simulation on Forage - June 2025

- Optimized a Random Forest model for customer churn prediction, achieving 50% recall using Python (Pandas, NumPy) and delivered actionable insights via data visualization and an executive summary.

### JPMorgan Chase & Co. Quantitative Research Virtual Experience Program on Forage - June 2025

- Completed a simulation focused on quantitative research methods
- Analyzed a book of loans to estimate a customer's probability of default
- Used dynamic programming to convert FICO scores into categorical data to predict defaults

## EDUCATION

### Indian Institute of Technology, Bhilai

July 2024 - May 2028

#### Bachelor of Technology - Data Science & Artificial Intelligence

- CGPA 9.48 Year 1
- Serving as Deputy Class Representative, Mechatronics '28
- All India Rank 10463, JEE Advanced 2024

### Reliance Foundation School, Koparkhairane

September 2022 - April 2024

- CBSE: Physics, Chemistry, Mathematics with Computer Science
- Scored 96% in Class 12th, Rank 3 in Science Stream

## ADDITIONAL INFORMATION

- **Languages:** English, Hindi, Gujarati
- **Certifications:** Ongoing – Complete Data Science, Machine Learning, Deep Learning, Natural Language Processing Bootcamp by Krish Naik
- **Awards/Activities:** Member of Epsilon Robotics Club at IIT Bhilai, Member of Drishya Acting Club at IIT Bhilai