

# Krishnakanta Maity

## Data Scientist – Statistician – Research Analyst

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### SUMMARY

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Quantitative ML Researcher with 2+ years of experience building and deploying deep learning-based algorithmic trading strategies for Nifty 50 intraday options. Skilled in LSTM-based directional prediction, Bayesian probabilistic frameworks, backtesting pipelines, and live autofire trading systems. Strong foundation in Statistics, time series analysis, and feature engineering. Experienced in Python, PyTorch, and end-to-end model deployment using CI/CD pipelines.

### EXPERIENCE

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#### Senior Research Analyst

*Feedsense AI*

Apr 2024 – Present

*Ecospace (Newtown), Kolkata, India*

- Designed, developed, and deployed **3+ Nifty 50 intraday options trading strategies** using deep learning models for directional prediction, achieving consistent live autofire execution.
- Implemented **LSTM-based models** for long-only and short-only strategies; improved directional accuracy by approximately **15–20%** over baseline rule-based approaches.
- Engineered and integrated a **Bayesian probabilistic framework** for a short-only strategy, enhancing model robustness and uncertainty quantification under volatile market conditions.
- Conducted rigorous **backtesting, sensitivity analysis, and walk-forward validation** to evaluate risk-adjusted returns and drawdown profiles across strategy variants.
- Automated **model retraining and strategy deployment pipelines** using Python, PyTorch, and broker APIs, reducing manual intervention and improving execution consistency.

#### Research Analyst

*Vista Intelligence*

Jul 2023 – Mar 2024

*Park Street, Kolkata, India*

- Built a **portfolio optimization framework** using maximum drawdown and Sharpe ratio metrics across FnO and Forex products, enabling systematic capital allocation decisions.
- Developed and maintained **multi-asset quantitative models** evaluating risk-return tradeoffs, supporting portfolio rebalancing for equity and currency derivatives.
- Researched and implemented a **Nifty 50 intraday long-only options strategy** using LSTM-based directional prediction models with feature engineering on OHLCV and technical indicators.
- Designed and streamlined **feature extraction, data normalization, and intraday signal generation pipelines** in collaboration with data engineering teams.
- Presented model insights and strategy performance reports to senior analysts and leadership, driving data-informed investment decisions.

#### Jr. Data Science Team Lead, Demand Forecasting Project

*Internship at Dr. Reddy's Laboratories*

Jan 2023 – Jun 2023

*Hyderabad, India*

- Led a team to develop **SKU-level demand forecasting models** using statistical and ML methods, improving forecast accuracy for supply chain planning.
- Reduced forecast error by streamlining **feature engineering, data normalization, and automated ingestion pipelines**, cutting manual preprocessing time significantly.
- Collaborated cross-functionally with sales, marketing, and supply chain teams to align forecasting methodology with business KPIs.
- Presented analytical findings and model performance to **senior management**, supporting data-driven inventory and production decisions.

### EDUCATION

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#### Ramkrishna Mission Vivekananda Educational Research Institute

*Master of Science in Big Data Analytics (CGPA 8.1)*

Belur Math, Howrah

*Sept. 2021 – Jul. 2023*

#### Visva-Bharati University

*Master of Science in Statistics (CGPA 7.05)*

Bolpur, Shantiniketan

*Jul. 2018 – Sept. 2020*

#### Midnapore College (Autonomous)

*Bachelor of Science in Statistics (79.63%)*

Paschim Medinipur

*Aug. 2015 – Jun. 2018*

## PROJECTS

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### Does Bank Vulnerability Impact The Firm-Level Crash Risk During Economic Stress?

*Finance, DID Regression, Panel Data*

Aug 2022 – Jan 2023

- Analyzed Indian bank vulnerability during COVID-19 using **marginal expected shortfall (MES)** of stock returns as a systemic risk measure.
- Collected NSE financial data for FY 2020–22; applied **panel data regression and difference-in-differences (DID)** models to assess bank-firm crash risk linkage.
- Found that firms borrowing from vulnerable banks exhibited **lower crash risk post-COVID** relative to firms associated with non-vulnerable banks.
- Code: [github.com/iamkkmcmd/SummerProject](https://github.com/iamkkmcmd/SummerProject)

### Diagnosis of Pneumonia from Chest X-Ray

*Computer Vision, Deep Learning*

Feb 2022 – Jun 2022

- Built a **VGG-19 transfer learning** model for binary classification of pneumonia from 5,232 chest X-ray images (Kaggle dataset).
- Achieved **91% classification accuracy** with optimized inference time through model pruning and fine-tuning.
- Code: [github.com/iamkkmcmd/ML\\_Project-Group\\_3ml](https://github.com/iamkkmcmd/ML_Project-Group_3ml)

### Prediction for Rating Short Stories of Sherlock Holmes

*NLP, Regression, Sentiment Analysis*

Jul 2020 – Sep 2020

- Applied **UDPipe-14** for linguistic feature extraction from 56 Sherlock Holmes stories; performed regression to predict reader ratings.
- Identified **story age and detective-term frequency** as dominant predictors of reader ratings using feature importance analysis.
- Code: [github.com/iamkkmcmd/holmes-story-analysis](https://github.com/iamkkmcmd/holmes-story-analysis)

### Mathematics Behind Beauty of Phyllotaxis Pattern

*Golden Angle, Golden Ratio, Shiny Web App*

Jan 2020 – Apr 2020

- Developed an interactive Shiny web app to visualize phyllotaxis patterns using the golden ratio and golden angle.
- Demonstrated mathematical principles underlying natural arrangements such as sunflower seeds and pine cones.
- Published the app online showcasing aesthetic and mathematical insights behind natural symmetry.
- **Code:** [github.com/iamkkmcmd/BeautyOfNature](https://github.com/iamkkmcmd/BeautyOfNature)
- **Live Demo:** [iamkkm-cmd.shinyapps.io/BeautyOfNature](https://iamkkm-cmd.shinyapps.io/BeautyOfNature)

## CERTIFICATIONS

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**NISM Series XV: Research Analyst Certification** | *SEBI / NISM, 2023*

## TECHNICAL SKILLS

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**Languages:** Python, R, C, SQL (PostgreSQL), HTML/CSS

**ML & Deep Learning:** LSTM, Transformers, Bayesian Inference, Time Series Forecasting, Feature Engineering, Backtesting, Hyperparameter Tuning, Transfer Learning, scikit-learn, XGBoost

**Libraries & Frameworks:** PyTorch, pandas, NumPy, Matplotlib, Seaborn, statsmodels, ggplot2, Streamlit, R Shiny, Quarto

**Developer Tools:** Git, Docker, Google Cloud Platform (GCP), VS Code, R Studio, CI/CD Pipelines

**Domain Knowledge:** Algorithmic Trading, Options Strategies, Portfolio Optimization, Risk Management, Demand Forecasting, Statistical Hypothesis Testing