HIMANSHU BALASAMANTA

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Education

IIT BHU (Banaras Hindu University), Varanasi   May 2018 – May 2022
B.Tech : Electrical and Electronics Engineering   *CGPA- 8.13*

Awards and Recognition

- AIR 2503 in JEE Advanced 2018 (99.5 percentile), AIR 5851 in JEE Mains.
- **Google Summer of Code 2020**, contributed to [Eclipse IDE](#).
- **NTSE Scholar**, awarded to top 750 students nationally.
- **Expert**, Codeforces, **5-star**, CodeChef [ID : Balasamanta](#)
- **Global Rank 3**, [Codechef Elevate](#) – Programming + CS Concepts Quiz

Experience

WorldQuant BRAIN Research Consultant   March 2024 – Present
Submitted alphas as a part-time quant researcher through the WorldQuant BRAIN platform.   *Mumbai, India*

- Developed alpha signals using **daily granularity data** for **American equities**, incorporating **price-volume, fundamental, options pricing** and **news sentiment data**.
- Used FastExpression language to construct alphas with **Sharpe ratio > 3.1 and fitness > 1.8**, while maintaining low correlation.
- Ranked in the top 900 globally in the WorldQuant International Quant Championship 2025.
- **Skills: Statistics, Probability, Mathmatics**

Microsoft   May 2022 – present
Software Developer   *Hyderabad, Telangana*

- Led development of accessibility features featured on the [Windows 11 Home Page](#).
- SME for Windows Narrator, refactoring legacy code using **SOLID** principles to enhance performance and maintainability.
- Increased the coverage of Navigation shortcuts by 14 percent.
- **Skills: C++, WinUI3, winrt, Azure Storage.**

Quant Projects

Algorithmic Trading   March 2024 - Present
Intraday Algorithmic Trading with FYERS Python API

- Designed and deployed intraday strategies on **INR 35,000 capital** using **minute granularity** price-volume data from Indian equities, incorporating **news data** insights for signal validation   .
- Implemented **mean reversion and momentum-based strategies** including **Moving Average Crossover, Bollinger Bands, and inverse volatility models**.
- **Skills: Python, Statistics, Technical Analysis.**

Binomial Model for Options Pricing With GARCH
Binomial Tree for pricing American options in C++

- Implemented **Leisen-Reimer binomial tree** with **GARCH-driven volatility** forecasts for option pricing.
- Modeled time-varying volatility to detect temporary mispricings in option markets.
- Enhanced model with directional overlays using exponential moving averages (EMA).
- **Skills: Derivitive Pricing, Options Pricing, C++, Stocastic volatility Modeling.**

Machine Learning Quant Project

Neural Network for Statistical Arbitrage
Predictive modeling for dynamic asset pricing

- Established statistical correlation between asset pairs for identifying trading opportunities.
- Trained a neural network to predict price adjustments based on abrupt movements in related assets.
- Engineered features like **price change magnitude, time since disruption, and volatility** for model accuracy.
- **Skills: Python, Machine Learning, Neural Networks, Mathematics, Statistics.**