

# ATISH KUMAR

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## EDUCATION

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**Indraprastha Institute of Information Technology, Delhi (IIIT-D)** *July 2021 - Present*

Ph.D. Economics

CGPA: 8.2/10

Coursework: Statistical Machine Learning, Convex Optimization, Stochastic Calculus, Markov Decision Processes, Advanced Macroeconomics (ISI-D), Advanced Econometrics, Time Series Econometrics, Game Theory

**University of Hyderabad**

*July 2016 - June 2018*

M.A. Economics

CGPA: 8.7/10

## RESEARCH PROJECTS

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### **Portfolio optimization using Anomaly Boosting: A deep learning approach**

- Constructed anomalies such as Fama-French and other factors to measure portfolio returns from the Balance sheet and historical stock price data.
- Applied a multivariate time-series transformer model with Sharpe Ratio as the loss function to assign optimal weights to each of stock.
- The portfolio was updated every month using a long-short strategy for the top 300 stocks by market capitalization. Achieved a Sharpe ratio of 2.1 with an economic.

### **Investigating the impact of market power on core inflation**

- Estimated firm-level market power using balance sheet data to measure its impact on sectoral core inflation, and analyzed other key macroeconomic implications.
- Built a heterogeneous firms model with endogenous markups and different levels of bargaining power.

### **Real-time financial crime detection using Machine Learning**

*Work in Progress*

- Part of an industry project for one of the largest financial institutions in India.
- Developed an LSTM-Autoencoder to detect anomalous transactions in real-time.
- Combined the anomaly score with profile and other transaction-level features to arrive at risk probabilities using XGBoost.

### **Estimating the potential economic damage from climate change in India**

- Leveraging historical simulation of GCMs and Ground truth to forecast climate variables at the grid level using 3-D Transformers.
- Using causal inference techniques to estimate the potential economic cost on key sectors of the economy.

## EXPERIENCE

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### **The Hong Kong and Shanghai Banking Corporation (HSBC)**

*July 2018 - July 2021*

*Senior Analyst*

*Bangalore*

- Worked for the Risk Strategy team serving the Asia Pacific region and was Responsible for acquisition lending strategies and forecasting lifetime portfolio profitability of unsecured portfolios.
- Analyzed sectoral trends of economies and developed de-risking strategies under changing macroeconomic scenarios.
- Assisted country teams with pricing strategies, targeting/ eliminating segments, and efficient use of capital. Ensuring minimum profit hurdle from new acquisitions.
- Prepared Segment level Profit & Loss statements to assess the profitability of portfolios.
- Developed an R Shiny-based Loss forecasting dashboard which resulted in 1 FTE savings.

## **G20 Youth**

*Core Team Member, Secretariat*

*Dec 2022 - Aug 2023*

*New Delhi*

- Part of the G20 Youth secretariat, responsible for managing the collaborations with outreach partners
- Engaging with Corporates, Universities, and Multilateral organizations for the publication of white papers on the Youth-20 themes.

## **CONFERENCES**

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- 2nd AI-ML Workshop on Weather and Climate Modelling, 2025
- Asian Meeting of the Econometric Society 2024
- IIT Kanpur Research Scholars Meet 2024
- Delhi School of Economics Winter School 2023

## **TEACHING EXPERIENCE**

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- Microeconomics, Teaching Assistant (Monsoon 2021 and Monsoon 2022)
- Macroeconomics, Teaching Assistant (Winter 2022)
- Money and Banking, Teaching Assistant (Winter 2023)
- Behavioural Economics, Teaching Assistant (Winter 2023)

## **AWARDS AND ACHIEVEMENTS**

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- Dean's List Best Teaching Assistant Award, 2023
- Selected for the AMIE Ph.D. mentorship Program, 2022.
- HSBC Team Star Award 2019
- Rated top performer and role model (Top 2%) in HSBC
- National Level Runners up, Reserve Bank of India Policy Challenge 2018.

## **SKILLS**

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- Pyspark, Python (numpy, pandas, tensorflow, pytorch, xarray) SAS, R, STATA, MATLAB, High Performance Computing

## **EXTRA CURRICULAR**

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- Co-Founded the 'GPTW Quiz Club' at HSBC, 2020
- Quiz Master of 'Battle of the Minds Quiz' at Economics Conclave, 2016
- Winner of multiple School and College quiz competitions