Bijoy Ratan Ghosh

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Research Interests

Monetary Economics, Financial Stability, Fiscal-Monetary Policy Interactions, Central Bank Balance Sheet Dynamics, Financial Repression.

Education

University of Virginia(UVa) — **Charlottesville, VA**
Ph.D. in Economics — *2023–Present*

Indira Gandhi Institute of Development Research (IGIDR) — **Mumbai, India**
M.Phil. in Development Studies (Economics) — *2018–2020*

University of Hyderabad — **Hyderabad, India**
M.Sc. in Applied Mathematics — *2015–2017*

Institute of Mathematics & Applications — **Bhubaneswar, India**
B.Sc. (Hons) in Mathematics & Computing — *2012–2015*
Affiliated with Utkal University

Research in Progress

Unconventional Fiscal Financing & Risk Sharing

I study how unconventional fiscal financing reshapes the allocation and nature of sovereign risk across economic agents. I document cross-country differences in who absorbs these risks and in the forms those risks take. I then characterize the optimal risk allocation given key institutional and policy constraints.

Professional Experience

ANZ Banking Group — **Bangalore, India**
Associate Manager – Wholesale Credit Risk Modelling — *March 2022–June 2023*

- Conducted independent review of Sovereign LGD and Country Legal Risk LGD Models for wholesale credit portfolio.
- Converted legacy SAS-based models to R framework, establishing Git-Hub repository for version control, reproducibility, and streamlined execution.
- Led Individual Wholesale PD model remediation project, ensuring compliance with regulatory requirements.
- Applied advanced statistical methods and credit risk modeling techniques across multi-country sovereign portfolios.

IDFC First Bank — **Mumbai, India**
Senior Manager – Data & Analytics — *July 2020–Feb 2022*

- Developed machine learning PD models (XGBoost, Random Forest) for collections risk segmentation across Personal Loan, Micro Business Loan, and Used-Car portfolios.
- Built decision tree-based segmentation rules for low-volume products (Loan Against Property, Small-ticket LAP, Home Loan).
- Automated monthly execution pipelines for risk segmentation, reducing processing time by 40%.
- Designed and deployed Consumer Durable VAR model on AWS using logistic regression, facilitating team migration from SAS to cloud-based Datalake environment.
- Managed cross-functional analytics projects involving data engineering, model validation, and regulatory reporting.

Teaching & Research Experience

University of Virginia(UVa) — **Charlottesville, VA**
Graduate Teaching Assistant — *Fall 2025–Present*

- ECON 7020: Macroeconomic Theory I (PhD-level)
- Preparing and delivering supplementary lectures on dynamic optimization, recursive methods, and expectation operators in macroeconomic modeling.
- Designing problem sets covering Arrow–Debreu equilibria, sequential markets, incomplete markets frameworks, and commitment versus discretion in monetary policy.
- Grading assignments, exams, and providing detailed feedback to first-year PhD students.

University of Virginia(UVa) **Charlottesville, VA**
Graduate Teaching Assistant *Fall 2024–Spring 2025*
- ECON 3030: Money and Banking (Undergraduate-level)
- Led discussion sections on monetary policy transmission, financial system architecture, and central banking operations.
- Prepared supplementary materials on financial markets, interest rate dynamics, and macroeconomic stabilization policy.

Indira Gandhi Institute of Development Research (IGIDR) **Mumbai, India**
Research Assistant *July 2019–June 2020*
- Research Assistant to Dr. Rajeswari Sengupta on empirical banking sector productivity analysis.
- Conducted econometric analysis using Stochastic Frontier Analysis (SFA) and Data Envelopment Analysis (DEA) methodologies.
- Managed multi-country banking datasets from BIS and IMF sources; performed data harmonization and quality assurance.

Technical Skills

Programming: R (Advanced: data.table, dplyr, ggplot2, tidyverse, quantmod, fredr, zoo, xts), Python (Intermediate: pandas, numpy, statsmodels, scikit-learn), MATLAB (DSGE modeling, numerical methods), Stata (econometric analysis)

Econometric Methods: DSGE Model Estimation and Simulation, Bayesian Econometrics, State-Space Filtering (Kalman Filter), Structural VARs, GMM, Panel Data Methods, Time Series Analysis, Causal Inference, Impulse Response Analysis

Machine Learning: XGBoost, Random Forest, Gradient Boosting, Logistic Regression, Decision Trees, Model Validation, Cross-Validation

Data Management: Large-scale multi-country datasets (BIS, IMF, FRED, OECD, ECB SDW, World Bank), SQL (mySQL), Data harmonization and cleaning, Panel and time-series data construction

Specialized Software: Dynare (DSGE modeling), SAS (credit risk modeling), Bloomberg Terminal

Honors & Awards

University of Virginia
UVa Honor Committee Graduate Representative *2024–2025*

Quantitative: 168/170, Verbal: 156/170, AWA: 4.0/6.0
GRE Score: 324/340 *2022*

National Eligibility Test in Mathematical Sciences
CSIR-UGC NET Junior Research Fellowship & Lecturership *2018*

Graduate Aptitude Test in Engineering (Mathematics)
GATE Qualified *2018*

Indian Institute of Technology Kanpur (IIT Kanpur)
PhD Admission *2018*

Conferences & Presentations

September 2025: **Princeton Initiative**

Professional Service & Leadership

UVa Honor Committee **University of Virginia**
Graduate Representative *2024–2025*

- Serve on university-wide honor system governance body representing graduate student interests.
- Adjudicate academic integrity cases and contribute to policy development.

Languages

English: Native/Fluent

Hindi: Native/Fluent

Bengali: Native/Fluent

References

Available upon request