SURAJ KUMAR

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RESEARCH INTERESTS

Macroeconomics, Financial Markets, Computational Economics, Machine Learning, Econometrics

EDUCATION

M.A. Economics, Delhi School of Economics, Marks: 68.07% *May 2018*
B.Tech, Civil Engineering, IIT Delhi, C.G.P.A.: 7.23/10 *May 2014*
Minor, Business Management, IIT Delhi, C.G.P.A.: 8.25/10 *May 2014*

ACADEMIC ACHIEVEMENTS

- Secured **All India Rank 2** and received **Manmohan Singh Fellowship** in DSE *2016-17*
- Secured **All India Rank 1061** in AIEEE among 10,50,000+ students *2010*

PROFESSIONAL SERVICE

Research Associate, CAFRAL, Reserve Bank of India *Sep, 2022 - Present*
- Analyzed the impact of political constraints on monetary policy in 15 EM countries.
- Estimated monthly-state panel inflation data using *local projection framework* to examine the relationship between food, fuel and core inflation.
- Constructed the opacity scores of NBFCs from credit ratings of corporate bonds.

Analyst, India Economics Team, Goldman Sachs *June, 2020 - Aug, 2022*
- Contributed to writing thematic reports and conducted econometric analysis on short-term and medium-term drivers of inflation, the RBI's reaction function, determinants of India trade deficit, and fiscal balance.
- Published regular comments and provided forecast on India's macro data releases:- inflation, growth, industrial production, the RBI policy rate, trade and fiscal balance. Published weekly and monthly tracker of economic indicators and COVID-19.
- Constructed proprietary *GS India Consumption and Investment indices*, and devised *GS India stringency index* from lockdown policies of 10 key states.

ML Model Developer, American Express *Jan, 2019 - Mar, 2020*
- Made Big Data ML models using AXGBoost to predict spend of prospective US customers acquired through telemarketing and sales representative channels.
- Ensured correct implementation of telemarketing Net Response Rate (NRR) Model in production by leveraging SQL and Linux shell scripts.

Model Validator, Credit Suisse *July, 2018 - Dec, 2018*
- Validated the EMEA Debt Capital Market revenue Model ◯R Notebook Code
- coded in R the *convertible callable bond pricing* algorithm based on Goldman Sachs 1994 research paper, and programmed in R to evaluate multiple regression models. ◯R Code

DATA SCIENCE/ STATISTICAL PROGRAMMING COMPETITIONS

- **Secured Rank 2** in ***American Express Analyze This 2017*** *August 2017*
  - Used machine learning classification algorithms to target credit card prospects. Used R and Python; **Models Used**: Multinomial Logistic Regression, Random Forest and Support vector machines ◯Github Repository
- **Secured Rank 1** in ***Credit Suisse FinStats 2017 Competition*** *Dec 2017*
  - Used *integer linear programming* to model diversification constraints (asset classes and asset products) in an optimal portfolio allocation problem ◯GitHub Repository

COURSE PROJECTS

Dynamic Programming Model of the Economy *Jan, 2018 - March, 2018*
- Used Python to program Two State - One Control Bellman Equation Model in Lucas Asset Pricing Economy ◯Jupyter Notebook

TECHNICAL SKILLS

Computer Programming: R, Python, SQL, Hive, Shell Script, SAS, LaTeX
Data Analysis Tools: STATA, Excel, Eviews, MATLAB, ArcGIS