

Ritwiz SARMA

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SUMMARY: Versatile economics postgrad with policy research experience involving techniques like NLP and geospatial analysis. Passionate about firms, climate, and infrastructure.

WORK EXPERIENCE

Research Associate at CAFRAL, *a research institute at the Reserve Bank of India* JUN 2025 - PRESENT

- Primary area of work: *climate finance, economic impact of climate change, long-run climate adaptation* with Dr Sankalp Mathur.
- Co-authored research on non-bank credit responses to floods, implementing difference-in-differences designs using large proprietary credit datasets and satellite-based flood inundation data.
- Built and processed large-scale geospatial datasets for econometric analysis, including 30+ years of agricultural yields, 25 years of ERA5 climate data, 15 years of flood inundation data.
- Contributed to RBI policy projects through drafting policy notes and presentations on climate insurance and public sector lending.
- TA for Climate Policy elective at Indira Gandhi Institute for Development Research (IGIDR).

Data Consultant at ENERGY POLICY INSTITUTE AT CHICAGO, UNIVERSITY OF CHICAGO MAR 2025 - JUN 2025

- Built and analysed large geospatial datasets on ozone, air quality, and similar indicators using R and Google Earth Engine.

Summer Intern - Data Science at xKDR FORUM with *Prof Ajay Shah* MAY 2024 - JUL 2024

- Developed and implemented deep-learning models for text classification on legal data, achieving F1-scores of over 85%.
- Contributed to ETL pipeline with *novel pre-processing pipeline* for text data using spaCy & domain-specific parsers.

Research Assistant for *Ankit Bhatia, PhD Candidate at Johns Hopkins SAIS* JAN 2023 - DEC 2023

- Constructed **first-of-its-kind geospatial database of over 2,200 Indian bridges** for difference-in-differences study on the economic impact of public infrastructure investment. Used *QGIS, Google Earth, and R*.
- Developed multithreading strategies and architecture for building a **high-resolution database of market values across over 6,40,00,000 plots** in 5 states.
- Building technical resources for *scraping and textual analysis* of **over 6,00,000 issues** of Central and State Gazettes.

Junior Associate (Tech and Data Initiatives) at MOOLYA FOUNDATION JUL 2022 - DEC 2022

- Geospatial and alt data specialist, led team of 5 in dataset-building initiatives.
- Leveraged **data scraping and HTML parsing techniques** in Python to create datasets on over 18,00,000 Lok Sabha and Rajya Sabha debates, 1500+ CAG Audit Reports and 400+ MOSPI statistics.

Editorial Assistant at SOCIAL POLICY RESEARCH FOUNDATION MAR 2022 - JUL 2022

- Authored **qualitative case study** on language endangerment in Arunachal Pradesh, Northeast India. [Published here](#).

EDUCATION

Master of Arts, General Economics 2023 - 2025

Madras School of Economics, Chennai

MASTER'S THESIS: *Does One District One Product Deliver? Evidence from Uttar Pradesh.*

Bachelor of Arts (Honours), Humanities and Social Sciences 2018 - 2021

Cluster Innovation Centre, University of Delhi, New Delhi

Meta-College structure: studied Economics (at Shri Ram College of Commerce), English Literature (at Hindu College) and foundational courses in political science, sociology, and philosophy. Ranked 24th nationally in entrance exam.

SKILLS

Python Webscraping, NLP with TensorFlow, PyTorch

R Geospatial analysis, econometric modelling, ggplot

Stata Econometric modelling, extracting unit-level data

SQL Database manipulation, sqlite3

QGIS Geospatial manipulation, building choropleth maps

C++ Understanding of algorithms and data structures

L^AT_EX Papers, tikz graphics, and beamer presentations

Git/SVN CLI Repository management

WORKING PAPERS

- **Who Lends When it Floods? NBFCs, Banks, and Household Liquidity in India**

With Sankalp Mathur. Presented at the ESCP RCCC Workshop, Banco de Espana and Ahmedabad University.

SUMMARY: We examine whether non-banks fill credit gaps following climate shocks. We combine georeferenced flood-extent data with a novel, near-universe panel of Indian retail credit data and implement a difference-in-differences design exploiting the 2017 UP-Bihar floods as an exogenous shock. We find that non-banks expand lending by 5.75% in affected areas relative to banks, even as overall delinquency rates remain comparable to those of banks. This paper provides the first large-scale evidence of non-banks' countercyclical role in disaster recovery.

- **Does One District One Product Deliver? Evidence from a Subnational Industrial Policy**

With Gopal Krishna Roy. Review & Resubmit at the BE Journal of Economic Analysis and Policy.

SUMMARY: This paper studies the economic effects of the One District One Product (ODOP) programme, a subnational industrial policy implemented in Uttar Pradesh, India. Using repeated cross-sections of establishment-level data from India's official surveys of unincorporated enterprises, we construct a novel district-industry panel and implement a difference-in-differences design to estimate the programme's impact on gross value added, employment, capital, and firm counts. Across a range of specifications, we find little evidence of robust positive effects on these outcomes in the short run; estimates are generally small, statistically insignificant, or negative.

- **Development at Crossroads: Lessons from Road Development in Afghanistan.**

With Ankit Bhatia. In progress.

SUMMARY: Transport infrastructure assumed a strategic priority only next to defense and military expenditure in the Afghan reconstruction project post the collapse of the Taliban regime in 2001. We explore the political economy challenges of aid-funded development in fragile settings. We identify poor contracting mechanisms, the nexus among insurgents and middlemen, and weak state capacity as three primary political economy factors causing the collapse of strategic road infrastructure in Afghanistan.

POLICY PUBLICATIONS

- **It Starts at Home: Community Involvement for Language Rejuvenation in Northeast India**

Published by SPRF India. Presented at Kautilya Colloquy 2023 (won Best Presenter).

SUMMARY: This study attempts to analyse the cultural impact of language loss in Tai Khamti speakers, an endangered language community native to North-Eastern India. Primary data is collected through interviews to assess cultural markers relating to linguistic maintenance, indigenous knowledge and documentation, linguistic cultural markers, and narrative forms.

DATA SCIENCE PROJECTS

- **Hawkishness Classification on FOMC Transcripts**

With Bhanu Pratap and William English. Ongoing.

SUMMARY: Applied advanced NLP techniques including transformer-based embeddings and fine-tuning strategies to extract monetary policy signals from Federal Open Market Committee communications. Multi-class classification task using numerous contextual embedding models.

- **Satellite Data for Economy-Ecology Tradeoff Research**

Ongoing with Riju Garg. Hosted on GitHub [here](#).

SUMMARY: Leveraging recent advances in satellite data to build a dataset of economic and environmental indicators for India. Features harmonized night-lights enabling comparisons across DMSP-OLS and VIIRS data, built-up area from the Global Human Settlement Layer, and land surface temperature from MODIS.

- **BERT and Deep Learning for Classification on Administrative Data**

Ongoing. Hosted on HuggingFace [here](#).

SUMMARY: NLP models classifying The Gazette of India documents by identifying the most probable issuing ministry; facilitating policy research by enabling the systematic analysis of administrative documents in India.

ACADEMIC CONFERENCES

- 3rd DSE Young Scholars' Seminar, Delhi School of Economics, Delhi IN, 2026.
- 7th Annual Economic Conference, Ahmedabad University, Ahmedabad IN, 2026.
- Annual Conference of the Indian Econometric Society, Varanasi IN, 2025.
- Kautilya Colloquy, Kautilya School of Public Policy, Hyderabad IN, 2024 (won Best Paper).
- Kautilya Colloquy, Kautilya School of Public Policy, Hyderabad IN, 2023 (won Best Paper).

INVITED TALKS

- Using deep learning to classify court hearings. *xKDR Forum*. July 22, 2024.
- Understanding Language Endangerment and its Policy Implications. *Mahul Phul Dialogues*. Online by ST & SC Development, Minorities & Backward Classes Welfare Department, Government of Odisha. December 28, 2023.

PERSONAL VENTURES

Undergraduate Research Lead at DESIGN INNOVATION CENTRE, Delhi University JAN 2019 - JUL 2019

- Founded an initiative called "Loggerheads" to study political argumentation in Parliament, aided by the Design Innovation Centre.
- Led 5-member team which used content analysis techniques and BERT to assess 306 days of the 16th Lok Sabha's debates.
- Participated in Thomson Foundation's JournalismNow programme - completed courses on data journalism and online media.

CERTIFICATIONS

- Development Economics, by IZA G2LM-LIC and the London School of Economics
- Google Advanced Data Analytics Professional Certificate

REFEREES

Dr Gopal Krishna Roy

Assistant Professor
Madras School of Economics
Chennai, TN

Siddarth Raman

Consultant, Janaagraha
Researcher, XKDR Forum
Mumbai, MH

Ankit Bhatia

Research Economist
World Bank,
Washington DC, US

INTERESTS AND ACTIVITIES

- Dedicated quizzier; Convenor at Quiz Society CIC, led organisation for two crowdfunded quiz events; multiple wins across Delhi and Chennai quiz circuit.
- Writer and journalist; served as Editor for literary magazines across school and college.
- Ran focus groups for a national political party in the East Delhi Lok Sabha constituency in preparation for the 2019 General Elections.