Siddharth Mohapatra | CV

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Research Interests

Ecological Economics, Development, Econometrics, Inequality, Unequal exchange

Education

IISER Pune **Pune**

BS-MS Applied Mathematics, CGPA – 8.3 *Aug 2018– May 2023*

Selected coursework

- Mathematics: Statistical Inference (A+), Probability (A), Mathematical Optimization (A), Graph Theory (B+), Algorithms (B+)
- Social Sciences: Development Studies (A), Economics and Public Policy (B+)
- Other: Data Science (A), Mathematical Methods (A+)

Master's Thesis

Title: *Network Modelling of Extreme Dependence of High Dimensional Financial Time Series*

Supervisor: Prof Rituparna Sen (ISI, Bangalore)

Research Area: Applied Statistics

Description: In this project, I studied the phenomenon for extreme dependence, also known as contagion, where shocks in financial time series move together and propagate distress. I worked on developing a new framework to analyse and quantify the amount of contagion in a market system, and used this information to construct a network representation of the market. Using known crisis periods as benchmarks, I investigated how accurately the characteristics of this network representation reflect the distressed state of the market.

Experience

World Resources Institute, India

Intern (Climate, Energy and Finance Division) *Jul 2025 – Present*

I am currently working on the Energy Policy Simulator India, and also researching topics in energy security in the Indian context.

Futures First **Hyderabad**

Market Analyst *Jul 2023–Sep 2024*

I worked on developing trading strategies in agricultural commodity future markets. I mainly studied contracts in the softs complex which includes products like cotton, cocoa, coffee and sugar.

World Resources Institute, India

Intern (Climate) *Sep 2021 – May 2022*

I worked in the Energy Policy Simulator India team, under the WRI - Climate division. My tasks involved analyzing India-specific data and updating the baseline data for the Energy Policy Simulator to take into account recent socio-economic changes to improve the accuracy of predictions made by the model. I also worked with the Just Transitions team which studied what a transition toward a sustainable and low-carbon economy would look like for small and medium enterprises in India.

Projects

- **A Review of Applications of Mathematical Models in Understanding Economic Systems**
  Mentor: Prof Deepak Dhar (IISER Pune) *Sep 2020 – Jan 2021*
  Grade: A
  This goal of this project was to explore and understand the basics of econophysics, which is an interdisciplinary field that aims to apply insights and techniques from physics to understand questions in economics. I studied various mathematical and econometric models of financial systems and analysed related data to infer some underlying properties of said systems.

- **Classical Phase Transitions**
  Mentor: Prof Victor Mukherjee (IISER Bpr) *May 2018 – Jul 2018*
  A reading project that focused on the study of statistical mechanics, especially phase transitions.

Awards

2018-2023: KVPY Fellowship (DST India - Renewed Anually)

2018: INSPIRE Fellowship (DST India)

Skills

Programming: Python, MATLAB, R, LaTeX

Technical: Statistical Inference. Data Science, Mathematical Modelling

Extracurriculars

- **Mathematics Club**, IISER, Pune
  Student Coordinator *2019 - 2020*
  Oversaw the functioning and events of the Mathematics Club. Primarily handled data and logistics pertaining to Math Club events.

- **98 Acres, Kalpa**, IISER, Pune
  Investigative Journalist *2021*
  Worked on the state and future of the Humanities and Social Sciences department of IISER, Pune.

- **Mimamsa**, IISER, Pune
  Content Writer *2020*
  Wrote articles for publicity and science outreach on social media.

Service and Outreach

- **Pradnya** *2019 - 2021*
  Taught communication and numerical skills to underprivileged kids in a classroom-based structure.
- **Spread the Smile** *2020*
  Worked as a volunteer and travelled to Gohe village in Maharashtra to increase science exposure in rural India.
- **Science Nurture Program** *2020*
  Worked as a volunteer to popularise science among students of 9th and 10th standard. Designed sessions and activities to help the students understand the essence of science.