

# Ridhima Sodhi

Data Science, Economics & Policy Professional

*ex- New York University, Carnegie Mellon University, Delhi School of Economics*

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## INTRODUCTION

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I'm Ridhima, a policy professional, with ~8 years of experience working and collaborating with academic, governmental, public and private organizations across the globe. In the past, I have advised clients on topics such as automation's impact on labor demand, international trade, health-care spending, smart-city planning, disruptive innovation, credit risk, and recidivism.

I also provide training in applied data-science methods at both academic and private organizations. Specific audience examples include employees in major international think-tanks (e.g. USDA), state governments(e.g. New York, Illinois), federal government bodies(e.g. US Census Bureau, India's NITI Aayog), and mission-driven organizations (e.g. NIMSME).

## TECHNICAL PROFICIENCY

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**Tools:** R-Studio, Python, GAMS, STATA, SAS (Windows, Enterprise Guide, Miner), SQL, Office (Excel), ArcGIS

**Methods:** Regression, Machine Learning, Survival Analysis (Cox Regression, Kaplan Meir), Non Linear Programming and Optimization, Impact Evaluation, Topic Modeling, Spatial Analysis, Visualization, Regular Expressions (RegEx)

## WORK EXPERIENCE *(selected)*

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### Research Fellow, McKinsey

April 2019- present

Leading a 60+ country study on understanding the effects of advances in technology on employment within the Future of Work (FoW) activity stream. Responsible for the whole model-infrastructure including labor data collation, econometric modeling, deep-country/sector analysis, and product development in R Studio for an automated interface

### Independent Consultative Work (confidential)

Feb 2020- April 2020

Simulated the effect of multiple trade-agreement scenarios on revenue, welfare, and other related factors to inform an ongoing FTA (free trade agreement) negotiation. The study was done at the level of detailed UN (HS) product classification, and utilized a combination of non-linear methods.

### Advisor, Economics and Data Science, Infinite Sum Modeling

Jan 2017 - present

Provide support to ongoing research projects, along with development of training programs. Few examples:

- Research (initial stages): Analyzing the impact of COVID-19 on migrant and informal labor clusters globally
- Training: Provided training in advanced data-science methods to middle and senior level professionals from government (e.g. NITI Aayog), academia (e.g. Delhi University, FMS) and industry. The two-week training was part of a larger ongoing initiative for National Institute of Micro, Small and Medium Enterprises, India

### Associate Research Scientist, New York University

May 2017- Dec 2018

Provided support to various research activities, teaching, and government-sponsored projects in the area of public policy, economics and innovation.

- **Research:** Analyzed the links between federal funding, collaborative network structures, and the role of gender on transformative/disruptive innovation. Research supported work for the White House, NIH, NSF, and others. Examples:
  - Examined the effect of organizational factors on subsequent innovative activity, measured by patents
  - Analyzed the factors influencing “time to disruptive innovation” using survival analysis (Hazard, Kaplan Meir)
- **Consulting:** Managed projects for US government (USPTO), private-collaborators, and university partners (NYU Vice-Provost Office; Institute for Research on Innovation & Science, University of Michigan) in the area of planning and predicting research funding, trends in technological innovation, and more
  - Developed a unique **data-driven, visualization tool** to simplify research planning by comparing the latest funded areas (topics) from different perspectives, such as university affiliation, expenditure and PI information.
- **Education**
  - **Coleridge Initiative, Executive Education Program (Python):** Provided all-round support for the development and running of a unique, data-science+policy program targeted towards state & federal government employees.

- Graduate Teaching: Provided support for teaching the newly curated Applied Data Analytics for Public Policy course for Masters' level students studying policy at NYU Wagner School of Public Policy. Topics included Machine Learning, Topic Modeling, Data Visualization, and Data Security

**Research Assistant, Palladium International** (impact consulting firm) June 2016 - Aug 2016  
 Conducted research for the Health Policy Plus (HP+) project (funded by USAID and PEPFAR) and provided support to various Health Financing activities currently underway at global, national and subnational levels. Selected Projects:

- Guatemala Health Financing: Leveraged national survey data to analyze movement in catastrophic health expenditures (CHE) under various thresholds and definitions between 2006-2014
- HIV Financing: Analyzed the cost of ART delivery in 97 countries with the objective of understanding differences between uniform and differentiated care models to ensure cost-efficacy. The study was presented at the 2016 International AIDS conference in South Africa
- Family Planning: Leveraged DHS data to analyze unmet demand for contraceptive care in Latin American countries

**Independent Consultant, Infinite Sum Modeling (USDA Study)** May 2016 - July 2016  
 Estimated government's support through input (fertilizer subsidy and minimum support pricing) towards agriculture in India for 2001-2015. Study included but was not limited to evaluating the Public Distribution System in India and researching about the market-Harvest Prices for various crops and fertilizers.

**Assistant Manager, Barclays** Feb 2013-Jul 2015  
 Led projects in Credit Risk and Fraud strategy teams and built a host of econometric models on SAS and VBA. Examples:

- Built a multi-variate econometric model to reduce overall fraud coming from gambling transactions. The final model identified fraudulent customers and fraudulent transactions with an accuracy rate of 86% and 99%
- Built a dynamic dashboard reporting weekly fraudulent activity by multiple clusters such as industry and merchants
- Developed "loss given default" models to predict and plan for losses coming from currently charged off customers

**Assistant Manager, IBM, India** May 2012-Jan 2013  
 Worked on Text+Voice Mining projects to find data-driven and analytical solutions for clients in banking/insurance/others

### **MISCELLANEOUS ROLES and PARTNERSHIPS**

Advisor, Research and Fundraising, Fundamental Action and Research Foundation (NGO)  
 Guest Faculty, Amity University

### **EDUCATION**

**MS Public Policy & Management**, Carnegie Mellon University, H. John Heinz III College, United States Dec 2016  
**MA Economics**, Delhi School of Economics, India July 2012

### **PUBLICATIONS and PANEL PAPERS** (*links embedded where available*)

- "Global Spending on Family Planning and Reproductive Health, 2018" (Journal, Center for International Relations and Politics, Institute of Politics and Strategy, Carnegie Mellon University)
- "Money for Something: The Links between Research Funding and Innovation" (IZA, 2018)
- "Smart Street Sweeping in the City of Pittsburgh, PA" (Panel Paper, APPAM, Washington DC, 2017)

Research Support:

- "Family Planning in the Context of Latin America's Universal Health Coverage Agenda" (Global Health: Science & Practice)
- "Can differentiated care models solve the crisis in HIV treatment financing? Analysis of prospects for 38 countries in sub-Saharan Africa" (Global Health: Science & Practice)