DIVIJ SINHA

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EDUCATION

Harris School of Public Policy, University of Chicago Chicago, Illinois

MS in Computational Analysis and Public Policy - GPA 3.95/4.00 June 2024

- Siebel Scholar (2024) - Selected for the prestigious Siebel Scholars program, for applying a blended approach to problem solving combining computer science and policy analysis.
- Outstanding Peer Academic Support of the Year (2022-23) - Recognized by the University of Chicago acknowledging commitment to the academic community and dedication to fostering an environment of learning and growth.
- Teaching Assistant for the following courses -
  - Data and Programming for Public Policy I - Essential programming skills and data analysis techniques to support evidence-based policymaking.
  - Mathematics for Computer Science and Data Analysis - Introduces concepts of linear algebra and fundamentals of machine learning to public policy students
  - Software Engineering for Civic Tech - Focuses on software architecture and design, emphasizing skills and technologies essential for the type of collaborative development teams common in open source and civic technology sectors

Birla Institute of Technology and Science, Pilani Goa, India

B.E. (Hons) in Electrical and Electronics Engineering; Minor in Politics, Economics, and Philosophy July 2019

EXPERIENCE

University of Illinois, Chicago Chicago, Illinois

Adjunct Instructor January 2025 - May 2025

- Will be the adjunct instructor of the graduate course *PA 470 – Artificial Intelligence and Machine Learning in the Public Sector* at the College of Urban Planning and Public Affairs at the University of Illinois, Chicago for Spring Semester 2025.

Mansueto Institute for Urban Innovation Chicago, Illinois

Research Engineer June 2023 - Present

- Led the 2024 Data Journalism fellowship, managing 10 Research Assistants on 3 urban-focused projects, integrating advanced data analysis techniques with local journalism to address critical community issues related to public transit, public finance, and property ownership.
- Engineered a new feature representing homogeneous, contiguous sales environments for the Cook County Assessor's Office, towards enhancing the property tax assessment prediction model.
- Created a tool to generate customizable, public facing property tax explainer for the Cook County Assessor's Office for every Parcel in Cook County.
- Operationalized creation of property tax fairness metrics over the last 10 years in Cook County with Prof. Chris Berry.
- Collaborated with Cornell University on a project using cell-phone pings to study localised segregation.

Metric Geometry and Gerrymandering Lab Remote

Summer Researcher June 2024 - August 2024

- Created metrics and analysis for multiple large scale surveys for primary elections in the US, focussed on piloting new voting methods and slates of candidates with Prof. Moon Duchin at Cornell University.

University of Chicago, Center for Spatial Data Science Chicago, Illinois

Research Assistant January 2023 - June 2024

- Developed a robust web application allowing respondents to input information and draw their neighborhoods on an interactive map of Chicago to map Chicago's Neighborhoods through the perception of its residents (www.chicago-neighborhoods.com) with Prof. Talen, Prof. Bae, and Dr. Lydia Wileden with over 4,500 respondents.

Indian Institute for Human Settlements, Urban Informatics Lab Bangalore, India

Research Associate September 2019 - August 2022

- Implemented data cleaning, analysis, and modeling using Python and R on multiple research projects, with the goal of creating knowledge relevant for the policy process in the Global South.
- Drafted policy briefs, and reports across thematic areas including migration, employment, economic development, social protection, and child nutrition to provide actionable insights for various national, state and local government bodies.
- Designed and delivered an introductory course on using data and public data sources in India, for the Urban Fellows Programme, a graduate level inter-disciplinary fellowship.
- Instructed multiple ad-hoc courses for bureaucrats and policy research professionals, focussed on introducing non-technical audiences to different aspects of data analysis.

RESEARCH & PUBLICATIONS

- "Reproducing a Household: Recognising and Assessing Paid and Unpaid Domestic Work in Urban India", International Labour Organization, IIHS, 2022
- "Deficits in Decent Work: Employer Perspectives and Practices on the Quality of Employment in Domestic Work in Urban India", International Labour Organization, IIHS, 2022
- "Employer Practices and Perceptions on Paid Domestic Work: Recruitment, Employment Relationships, and Social Protection", International Labour Organization, IIHS, 2022
- "Predicting Operative Temperature with Machine Learning (ML)", IBPSA-England's Building Simulation and Optimisation Conference 2022, University of Bath
- "Implementing at-scale adaptive thermal comfort controls for mixed mode building using machine learning", Independence and Interdependence of Sustainable Spaces, FARU '22, University of Moratuwa
- "Policy Study in managing Urban Informal Sector", Non-public report for the Chief Minister's Rajasthan Economic Transformation Advisory Council, Government of Rajasthan on rethinking urban employment and reframing social security and benefits in the aftermath of the COVID-19 pandemic

PROJECTS

- Created national level estimates of district-to-district migration to bridge gaps in publicly available datasets, and predicted future fertility and mortality rates to 2051 for 5-year population projection intervals for age-sex cohorts.
- Produced a confidential district-level risk analysis report for the National Disaster Management Agency in the Govt. of India in March 2020 for the COVID-19 pandemic exploring the spread potential, the impacts, and the response capacity.
- Presented the preliminary analysis of the discrepancies in child health indicators across Karnataka using DHS survey data at a webinar with over 200 attendees, to a panel with experts from UNICEF and NITI-Aayog [Press Release, Govt of India].
- Contributed to the migration section for a report prepared for the XV Finance Commission on the potential of urbanization to accelerate post-COVID economic recovery.

SKILLS

Programming: Python (NumPy, Pandas, Polars, GeoPandas, Statsmodels, scikit-learn, PyTorch), R (Tidyverse, ggplot, sf, leaflet), SQL

Statistical Analysis: EDA, Inferential Statistics, Econometrics, Spatial Economics, GLM, Survey Modeling, Machine Learning, Deep Learning

Data Science: Analytics, Automation, Visualization (Tableau, Matplotlib, Seaborn), Web Scraping, Geospatial Analysis, Version Control (git)

Policy Research Methods: Survey Design & Sampling, RCTs, Large-scale Dataset Analysis (Census, NSS India, NFHS, DHS, ACS)