

DIVIJ SINHA

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EDUCATION

University of Chicago, Harris School of Public Policy	Chicago, IL
MS in Computational Analysis and Public Policy - GPA 4.0/4.0	June 2024
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 Chicago, Center for Spatial Data Science, Research Assistant	Chicago, IL - Jan 2023
<ul style="list-style-type: none">Working with Prof. Talen, Prof. Bae, and Dr. Lydia Wileden on building a survey tool to map Chicago's Neighborhoods through the perception of its residents	
Indian Institute for Human Settlements, Urban Informatics Lab, Research Associate	Bangalore, India - Sep 2019 - Aug 2022
<ul style="list-style-type: none">Implemented data cleaning, analysis, and modelling using Python and R on multiple research projects, with the goal of creating knowledge relevant for the policy process in the Global SouthDrafted policy briefs, and reports across various thematic areas including migration, employment, economic development, social protection, and child nutrition to provide actionable insights for various national, state and local government bodiesBuilt capacity for urban data analysis through designing and teaching 5+ courses for over 100 learners including bureaucrats and Fellows of the Urban Fellows Programme	
Genpact, Data Science Intern, Reinforcement Learning	Bangalore, India - Jul 2018 - Dec 2018
<ul style="list-style-type: none">Investigated the application of Reinforcement Learning for the company by taking up the challenge of loading trucks and delivered improvements over the pre-existing solution's fill efficiency and fulfilled client requirementsExecuted from scratch a modified version of the SARSA (Modified Q-Learning) agent algorithm for a Markov Decision Process	
North-Eastern Space Application Centre, Research Intern	Shillong, India - May 2017 - Jul 2017
<ul style="list-style-type: none">Developed and deployed an Incident Reporting Application for the Northeastern Region of India as a teamDeveloped the app using Ionic Framework and backend using PHP	

RESEARCH, PUBLICATIONS AND CONFERENCE PRESENTATIONS

- "Reproducing a Household: Recognising and Assessing Paid and Unpaid Domestic Work in Urban India", ILO, IIHS, 2023
- "Deficits in Decent Work: Employer Perspectives and Practices on the Quality of Employment in Domestic Work in Urban India", ILO, IIHS, 2023
- "Employer Practices and Perceptions on Paid Domestic Work: Recruitment, Employment Relationships, and Social Protection", ILO, IIHS, 2023
- "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 the Urban Informal Sector", Non-public report for the Chief Minister's Rajasthan Economic Transformation Advisory Council, Government of Rajasthan

PROJECTS

- Developed apps deployed on AWS using flask in Python, and Shiny (R) dashboards to explore domestic migration patterns built from national datasets such as the Census of India, 2011
- Created national level estimates of district-to-district migration to bridge data availability and quality 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
- Wrote multiple policy briefs and analyzed public and confidential government datasets for the Rajasthan Chief Minister's office on rethinking urban employment and reframing social security and benefits in the aftermath of the COVID-19 pandemic

SKILLS

Python - pandas, geopandas, numpy, statsmodels, scikit-learn, matplotlib, seaborn, beautifulsoup, requests, flask, sqlalchemy

R - tidyverse, ggplot, sf, leaflet, generalized linear models, survey models, shiny

Primary Data Sources - Sampling Design; Survey Data Analysis - self run surveys and nationally representative official surveys

Secondary Data Sources - Large scale tabular and spatial data; Census, NSS (India), NFHS, DHS surveys

Statistics - Exploratory Data Analysis; Descriptive and Inferential Statistics; Econometrics

Data Science - Data Analytics, Data Visualization, Web Scraping, Spatial Data, Tableau, Applied Machine Learning, Git, SQL

Microsoft Office Suite - Excel, PowerPoint, Word