Manu Singh

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Research Interests- Social Policy, Inequality, Stratification, Social Networks, Decision Making, Quantitative Methods, Geo-spatial Data Analysis and Machine Learning

Education

May-16 **MA-Quantitative Methods in Social Sciences (Data Science Concentration)**, *Columbia University*, New York.

- Master's Thesis : *Studying behaviour and network co-evolution in college students using social network analysis*
- Relevant coursework:
  - Algorithms for Data Science
  - Machine Learning for Data Science
  - Data Analysis for Social Science
  - Theory and Methodology
  - Probability and Statistics
  - Exploratory Data Analysis/Visualization
  - Social Network Analysis

May-12 **BE - Mechanical Engineering**, *University of Pune*, Pune.

- Bachelor's Thesis : *Optimized geometric parameters of a turbocharger for maximum efficiency using Computational Fluid Dynamic (CFD) analysis (Finite Volume Methods)*

Work Experience

Jun 16-Present **Research Specialist**, *Empirical Studies of Conflict*, Princeton University.

- Analysing the effect of aid spending on stabilization outcomes such as attitudes, violence, health and economic conditions.
- Spatio-temporal analysis of satellite imagery to proxy local activities (ArcPy, R).Transformed *'Nightlight Image Composites'* raster data to high resolution local economic data.
- Collating and restructuring disparate datasets to form panels for running multivariate regression analysis.

Jan-17 **Policy Writing**, Iyengar Radha, Jacob Shapiro, Benjamin Crisman, and Manu Singh (2017) *Afghanistan Stabilization Programs Analysis and Lessons Learned Study: Quantitative Trends Report* Policy Report for USAID & USIP.

Sep 15-May 16 **Research Assistant**, *Columbia Water Centre, Earth Institute*, Columbia University.

- Pre-processed 20 GB of NHD (National Hydrography dataset) to extract canal features and matched features to a pre-existing USGS (United States Geological Survey) database using ArcGIS and R(using fuzzy matching technique)
- Multivariate regression analysis to understand correlation between stocks of major crops and drought (using Palmer Drought Severity Index) from USDA (US Department of Agriculture) databases
- Developed high resolution national electricity grid network and transformed this geo-spatial network into a collection of voltage ratings. Salient in evaluating peak period power calculations and hydroelectric energy distribution.

Aug 12-Apr 15 **Assistant Manager**, *Engineering Research Centre*, Tata Motors Ltd.

- Built multivariate regression models, using user demographic data, kilometres, service history, and prior probability of failure, to effectively reduced part failure by 66%
- Created rudimentary predictive model based on data from CRM (Customer Relationships Management) to serve as pre-emptive warning system for emerging failures
- Initiated and spearheaded 2 cross functional teams comprising 10+ members across Supply Chain, Design, Manufacturing, Product Planning, Purchase and Materials to eradicate high frequency failures on vehicles

Software Proficiency

Experience With:, R, Python, MATLAB, C, HTML, ANSYS, ArcGIS,LaTeX.

Familiar With:, C++, STATA, SAP, AutoCAD, MySQL, ProE, SolidWorks, Gephi, VBA.

Additional Information

Jan-16 **Columbia SIPA Israel Delegation**, Member of a Columbia University's student delegation to Israel and Palestine,which involved conferences and meeting panellists to extend awareness of Israeli startups, agricultural innovations, cyber-security, military and political decision making, and conflict resolution.

Aug-15 **Data Science Specialization**, *Johns Hopkins University* , MOOC (Coursera).
•R Programming •Getting and Cleaning Data •Exploratory Data Analysis •Reproducible Research •Statistical Inference •Regression Models •Practical Machine Learning •Developing Data Products •Data Scientist's Tool box

Dec-14 **Google Analytics Individual Qualification Certification**.

Oct-12 **Mountaineering Expedition**, nominated for the Tata Steel Adventure Foundation's Outdoor Leadership Program. Summit scaled 14500 ft at Uttarkashi, India.

References

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