SAMBHAVI JOSHI

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EDUCATION

Georgia Institute of Technology | Atlanta, GA
MS in Geographic Information Science and Technology | August 2019- July 2020

Maulana Azad National Institute of Technology | Bhopal, India
Bachelors in Planning | August 2014 - May 2018

TECHNICAL SKILLS

Languages:	Python, R, SQL
GIS Applications:	ArcMap, ArcPro, PostGIS, QGIS, ENVI, Erdas Imagine
Data Management:	Microsoft SQL Server, Access and Excel, MySQL, PostgreSQL, ArcSDE, FME
Relevant Libraries:	pandas, geopandas, numpy, matplotlib, Py6S • rgdal, raster, lidR

PROFESSIONAL EXPERIENCE

Research Scientist I, Satelytics Inc. December 2021 – Present
- Piloted development of Utility Vegetation Management System by identifying individual tree risks using stereo data
- Calculated surface reflectance from top of atmosphere values using ACOLITE for various sensors within 3% error
- Detected CO2 emissions from natural gas and mineral plants using hyperspectral data within 450PPM error

Project Scientist, R&D, Satelytics Inc. December 2020 – November 2021
- Collaborated with experts from 4 organizations for onsite spectral and physical data collection over Lake Okeechobee, FL
- Quantified Nitrogen and Phosphorus concentration in Water and Soil using high spatial and spectral resolution data
- Estimated methane concentration from super GHG emitters using Landsat8 and Sentinel data

Graduate Research Assistant, Georgia Institute of Technology February 2020 – November 2020
- Produced R package for spatial networks analysis and tested the functionality for Covid-19 contact tracing within New York City Fire Department team
- Ranked freedom in world countries using self-organizing maps with 30+ socioeconomic indexes
- Designed web map application for National Centre for Civil and Human Rights that lets user study disparity in socioeconomic conditions in US counties and compare them with world countries

Geospatial Intern, Indian Institute for Human Settlement June 2018 - April 2019
- **Delhi Slum Maps:** Quantified housing situation of lower income groups in Delhi by generating footprints using Google Earth. Established that only 0.6 % of land area caters to 11-30% of the city population
- **Tacit Urban Research Network:** Collaborated with 5 research organizations to explore tacit embedded in practices adopted by auto construct settlements. Discussed limitations to urban planning practices in explaining navigation techniques used in settlements

PROJECTS

Utility Vegetation Management System
- Delineated tree canopy using topography products generated using tri stereo pair of Pleaides sensor
- Identified tree species and health using spectral profiles of known local abundant species
- Computed risk of vegetation falling on utility lines taking sway corridor into account with 87% accuracy

Predictive Analysis of the Impact of Weather on Travel Time
- Investigated spatial-temporal patterns of 2.5 million cab rides in NYC through spatial and network clustering
- Optimized performance of regression model to quantify relation between weather conditions and travel time through VIF, ANOVA, and regularization enhancing R-squared by 40%
- Benchmarked performances of SVM, XGBOOST, and Random Forest models, achieving the best accuracy of 72%

Hub Location and Routing Analysis for Farm-to-Table Platforms
- Improved routing for a farm to table delivery platform with 150+ entities by introducing consolidation hubs
- Identified restaurants as consolidation hubs using kernel density. Consolidation hubs reduced foods mile by 15%

PUBLICATIONS

- G.Bhan, I. Chakraborty, **S. Joshi**, et al. (2019). Isn't there Enough Land?: Spatial Assessments of 'Slums' in New Delhi