PUKAR BHANDARI

TRANSPORTATION DATA SCIENTIST

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PROFESSIONAL OVERVIEW

Transportation planner and data scientist with 3+ years of experience in travel demand modeling, geospatial analysis, and economic impact assessment. Proven expertise in developing and calibrating transportation models, conducting advanced statistical analysis, and creating automated workflows for regional planning initiatives. Strong background in stakeholder engagement and translating complex technical analyses into actionable insights for decision-makers.

WORK EXPERIENCE

Transportation Data Scientist | Wasatch Front Regional Council

Salt Lake City, UT | *September 2025 – Present*

- Lead development, calibration, and validation of travel demand models for the six-county Wasatch Front region using R, Python, and Cube, informing long-range transportation planning, policy evaluation, and investment prioritization for Utah's fastest-growing metropolitan area.
- Develop automated geospatial analysis workflows supporting planning initiatives, including the Regional Transportation Plan and Wasatch Choice Vision, translating complex transportation system analyses into actionable insights for local governments, agencies, and stakeholders across the region.

Associate Transportation Planner/Analyst | Metro Analytics

Atlanta, GA | *June 2023 – September 2025*

Travel Demand & Economic Modeling:

- Developed and calibrated travel demand models for multiple Metropolitan Transportation Plans (MTPs), including Bowling Green-Warren County MPO and Lower Savannah COG, serving populations exceeding 200,000.
- Led scenario-based economic impact assessments quantifying multi-billion dollar effects for regional plans in Utah, and conducted comprehensive benefit-cost analyses for major infrastructure projects, including Ohio DOT and Missouri DOT STIP programs valued at $12+ billion.

Transportation Planning and Analysis:

- Led comprehensive analysis efforts for regional planning initiatives, including the development of Metropolitan Transportation Plans (MTPs) for Valdosta-Lowndes, DARTS, Greater Dalton, and Bowling Green-Warren County, Lower Savannah as well as Regional Freight Plans for Stonecrest, ARTS, and TMACOG.
- Developed automated spatial analysis workflows processing Census, ACS, LEHD/LODES, and CTPP datasets , and integrated HPMS, NBI, AASHTOWare crash data, and local traffic counts to develop data-driven project prioritization frameworks.

Graduate Teaching and Research Assistant | University of Utah

Salt Lake City, UT | *August 2021 – May 2023*

- Conducted statistical analysis using R and SPSS on resident survey data (n=1,200+) for Salt Lake City "*Thriving in Place*" anti-displacement initiative.
- Developed integrated geospatial databases for mining operations research, combining historical georeferenced datasets with current global mining data collected through web scraping and web mining operations.

EDUCATION

Master of City and Metropolitan Planning

University of Utah (2021 – 2023)

Specialization: Transportation Planning, Transportation Analysis Methods, Data Science, and Geospatial Data Analytics

Bachelor's Degree in Architecture

Tribhuvan University, Institute of Engineering (2013 – 2018)

TECHNICAL SKILLS

Programming and Data Analysis:

R/RStudio: *dplyr, ggplot2, sf, quarto, shiny*
Python/Jupyter: *numpy, pandas/ geopandas, plotnine, seaborn, scikit-learn*
Statistical Methods: *Regression analysis, spatial statistics, machine learning (Random Forest, K-Means, Naive Bayes)*
Databases: *MS Access, SQLite, DuckDB*
Version Control: *Git/GitHub*
Documentation: *R Markdown, Jupyter, Quarto, LaTeX*

Transportation Planning & Analysis:

Travel Demand Modeling: *Cube, TransCAD*
Traffic Analysis: *Synchro/SimTraffic*
Economic Modeling: *IMPLAN, TREDIS, REMI*
Infrastructure Assessment: *NBIAS*
Transportation Datasets: *Census/ACS, CTPP, LEHD/LODES, NHTS, HPMS, NBI, FAF5*

Geospatial Analysis and GIS:

GIS Platforms: *ArcGIS/AGOL, QGIS, GeoDa*
Spatial Programming: *sf package (R), geopandas (Python)*
Spatial Analysis: *network analysis, accessibility modeling, spatial statistics, proximity analysis*

Other:

MS Excel and VBA
CAD: *AutoCAD, SketchUp*
Frontend: *HTML/CSS, WordPress*
Web mining/Web scraping: *httr2/rvest (R)*