

# PRAMESH PUDASAINI

☎ 520-999-5043 ✉ [pramesh@arizona.edu](mailto:pramesh@arizona.edu)  [pramesh-pudasaini](https://www.linkedin.com/in/pramesh-pudasaini)  [prameshpudasaini](https://github.com/prameshpudasaini)  [pudasaini.com](https://pudasaini.com)

Ph.D. student seeking Data Science internship for Summer 2024. I bring 3 years of research experience using machine learning, statistical, and optimization tools and 5 years of industry experience in project management.

## SKILLS

---

**Languages** <sup>(years)</sup>: Python <sup>(2+)</sup>, R <sup>(3+)</sup>, SQL <sup>(2+)</sup>, MATLAB, HTML  
**Packages**: Python (Pandas, Numpy, Matplotlib, Scikit-learn, TensorFlow), R (data.table, Plotly, Shiny, ggplot2, sf, leaflet)  
**Data Science**: ETL, cleaning, EDA, visualization, modeling, interpretation  
**Modeling Tools**: GAMS for optimization, DynusT for mesoscopic traffic simulation  
**Technologies**: Spark, Dask, APIs, Docker, version control (Git), LaTeX (Overleaf), WordPress  
**Miscellaneous Skills**: machine learning, deep learning & NLP (basics), statistical modeling, A/B testing, regularization

## WORK EXPERIENCE

---

### University of Arizona

August 2021 – Present

*Research Assistant*

*Tucson, AZ*

- Developed an XGBoost-based optimization framework (in Python) with 95% precision for reidentifying vehicles between detectors at signalized intersections using high-resolution signal and detection data.
- Developed mesoscopic simulation models for various dynamic traffic assignment scenarios in the Pima County network.
- Developed an algorithm (in Python) to predict experienced travel time on signalized corridors using multi-source traffic data; currently working on implementing this algorithm to generate low-cost, medium-resolution vehicle trajectory data.
- Programmed and deployed scripts using R Shiny, SQL, and Docker to develop a network-wide mobility assessment tool for assessing corridor-level traffic operations and safety metrics in the City of Phoenix.
- Developed a real-time intersection queue length estimation model (in R) with 86% accuracy using highly noisy datasets of vehicle detection from video sensors in the City of Tucson.

### Nepal Oil Corporation Limited

March 2017 – August 2021

*Deputy Manager*

*Kathmandu, Nepal*

- Assisted the project manager in demand forecasting, sales projection, scenario analysis, and optimization for project planning of two large-scale cross-country petroleum pipeline supply chain projects.
- Assisted the director of Engineering & Projects Department in preparing annual budget, procurement plans, and capital expenditure policies for three fiscal years.
- Prepared scope of works and contract documents for hiring consultants; reviewed detailed designs, drawings, and cost estimates from consultants; coordinated with contractors for field supervision and timely execution of contract.
- Prepared detailed designs and drawings, cost estimate, bill of quantities, bidding document, and contract document for four medium-scale civil construction projects; supervised three junior engineers and two overseers in the process.
- Key achievements: promotion to Manager in 4.5 years; contributed to timely completion of over 50% of civil construction projects and 90% of consulting tasks.

## EDUCATION

---

### University of Arizona

August 2021 – Present

*Ph.D. in Transportation Engineering (minor in Statistics & Data Science)*

*Tucson, AZ*

- **Dissertation**: Data-Driven Approaches for Improving Operations & Safety at Signalized Intersections using High-Resolution Event Data (Advisor: Dr. Yao-Jan Wu)
- **Research areas**: application of machine learning, simulation, statistical, and optimization tools in traffic operations and safety, specifically signal retiming, dilemma zone modeling, and dynamic traffic assignment.
- **Awards**: Herbold Fellowship, Roots for Resilience Data Science Scholarship, Delbert R. Lewis Graduate Fellowship, Jenny L. Grote Student Leadership Award
- **Organizations**: President, UA Institute of Transportation Engineers; Manager, Smart Transportation Lab

### Tribhuvan University

April 2017 – May 2019

*M.Sc. in Transportation Engineering*

*Kathmandu, Nepal*

- **Thesis**: A multi-objective analysis of a petroleum transportation network under uncertainty.

## PUBLICATIONS

---

- Pudasaini, P., Karimpour, A., & Wu, Y.-J. (2023). Real-Time Queue Length Estimation for Signalized Intersections Using Single-Channel Advance Detector Data. *Transportation Research Record*, 2677(7), 144-156. [DOI](#)
- Pudasaini, P. (2021). Integrated planning of downstream petroleum supply chain: A multi-objective stochastic approach. *Operations Research Perspectives*, 8, 100189. [DOI](#)