Pramesh Pudasaini

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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** (years): Python (2+), R (3+), SQL (2+), 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 ML-based optimization framework (in Python) to reidentify vehicles between detectors at a signalized intersection using high-resolution data; XGBoost-based framework achieved 95% precision and 92% recall.
- Developed mesoscopic simulation models in DynusT for dynamic traffic assignment scenarios in Pima County, AZ.
- Programmed an algorithm (in Python) to predict experienced travel time on arterials using multi-source traffic data.
- Developed and deployed a Shiny dashboard (using R, SQL, Docker) to analyze traffic safety & mobility in Phoenix, AZ.
- Proposed a real-time queue estimation model (in R) for signalized intersections using highly noisy vehicle detection data from video sensors; achieved 86% accuracy for tests carried out in Tucson, AZ.

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: contributed to timely completion of over 50% of civil construction projects; promoted to Manager.

Nepal Intermodal Transport Development Board **September 2016 – March 2017**

Civil Engineer *Kathmandu, Nepal*

- Assisted project managers and senior engineers in executing procurement and contract of two construction projects.
- Prepared detailed designs and drawings, cost estimate, bill of quantities, bidding document, and contract document for one medium-scale civil construction project.
- Drafted scope of works, cost estimate, and request for proposal documents for procuring consulting services.

EDUCATION

- Ph.D. in Transportation Engineering (Statistics & Data Science minor), University of Arizona, AZ (August 2021 – Present)
- M.Sc. in Transportation Engineering, Tribhuvan University, Nepal (April 2017 – May 2019)
- Bachelor's in Civil Engineering, Tribhuvan University, Nepal (November 2011 – September 2015)

ACHIEVEMENTS

- **Founder**: Code with C, a programming blog started as a hobby in March 2014 and sold in June 2015 (codewithc.com)
- **Awards**: Herbold Fellowship (2021), Roots for Resilience Data Science Scholarship (2023), Delbert R. Lewis Graduate Fellowship (2023), Jenny L. Grote Student Leadership Award (2024)
- **Publication**: 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 (Paper)
- **Leadership**: President, UA Institute of Transportation Engineers Student Chapter; Manager, Smart Transportation Lab