Amir Shahlaee

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Location: Seattle, Washington

Summary of Qualifications

- Over 5 years of academic and industry experience applying machine learning, data analysis, and statistical modeling techniques to solve complex problems in transportation engineering, with a track record of impactful research published in notable journals.
- Results-driven critical thinker with strong organizational skills and a proven ability to solve complex problems.
- Proficient in data collection, SQL database management, and data analysis.
- Proficient in programming languages including Python, R, MATLAB, and SQL.
- Experienced with data science libraries such as scikit-learn, TensorFlow, Keras, Matplotlib, Seaborn, Pandas, and NumPy, among others. Additionally, skilled in using AWS and Heroku for various data-related tasks.

Education

Master of Science, Transportation Engineering | Full Scholarship

- University of Maine, Orono, Maine, USA | GPA:3.78 | *Relevant Coursework:* *Jan 2021 - Dec 2022*
- Computer Vision, Database System Applications, Econometric, System Optimization, GIS Applications

Bachelor of Civil Engineering | Full Merit Scholarship Award

- Sharif University of Technology, Tehran, Iran | Graduated Cum Laude | *Relevant Coursework:* *Sep 2015 - Sep 2019*
- Numerical Computing, Probability & Statistics, Python, Systems Eng, Economic Eng, Project management

Research Interests

- Artificial Intelligence, Machine Learning, and Statistical Modeling.

Publications

November 2022: **Amir Shahlaee**, Mohammadali Shirazi. *Modeling the impact of the COVID-19 pandemic on speeding at rural roadway facilities in Maine using short-term speed and traffic count data. Accident Analysis & Prevention* [Link]

July 2023: Ennis Marshall, Mohammadali Shirazi, **Amir Shahlaee**. *Leveraging probe data to model speeding on urban limited access highway segments: Examining the impact of operational performance, roadway characteristics, and COVID-19 pandemic. Accident Analysis & Prevention* [Link]

Academic Experience

Graduate Research Assistant

Transportation Lab, University of Maine, Orono, Maine *Jan 2021 - May 2022*

- Published research on the impact of the COVID-19 pandemic on speeding in rural roadways.
- Successfully applied advanced statistical techniques, including panel data analysis and time series analysis, to analyze network-wide data for an in-depth speeding analysis in New England, leading to a published article in a prestigious Accident Analysis and Prevention journal.
- Cluster the speed data using K-means and support vector machine (SVM).
- Scrape more than 30,000 databases using Python from DOT website.

Graduate Teaching Assistant

Mathematics Department, University of Maine, Orono, Maine *Sep 2022 - Dec 2022*

- Taught and graded 6 recitation classes per week, providing support to students in mathematics

Undergraduate Research Assistant

Sharif University of Technology, Tehran, Iran *Mar 2019 - Sep 2020*

- Optimized the queue length and delay time in border checkpoints using AnyLogic simulation software.
- Collected data by designing and distributing surveys and performing several interviews of drivers

Industry Experience

Data Scientist **Transpo Group**
Kirkland, WA *Jan 2023 - Jan 2024*

- Led the creation and deployment of a vehicle, pedestrian, and bicyclist counting tool for intersection analysis, achieving high accuracy through meticulous development and optimization efforts. This cost-effective solution markedly improved workflow efficiency, outperforming previous data collection methods.
- Developed and implemented custom Python toolbox in ArcGIS Pro for cost analysis, streamlining processes and improving efficiency.
- Developed Python-based tool to extract data from water stations across Washington State websites using APIs and integrate retrieved data into GIS layers.
- Engineered advanced automation tool deployed as a web application on Heroku, significantly enhancing workflow efficiency.

Summer Intern Data Scientist **Transpo Group**
Kirkland, WA *Jun 2022 - Dec 2022*

- Conducted extensive data wrangling tasks on diverse datasets, ensuring data cleanliness and compatibility for analysis.
- Produced visual representations using Python, R, and ArcGIS Pro for impactful reports.

Course Certificates

Data Science Professional Development
Certifications of Specializations Issued by Coursera *Mar 2020 - Present*

- Neural Networks and Deep Learning — Stanford University
- Improving Deep Neural Networks: Hyperparameter Tuning, Regularization and Optimization — Stanford University
- Introduction to Data Science in Python — University of Michigan
- Applied Plotting, Charting Data Representation in Python — University of Michigan
- Applied Machine Learning in Python — University of Michigan
- Convolutional Neural Networks — Stanford University
- Python Data Structures — University of Michigan
- Machine Learning with MATLAB — Stanford University
- Introduction to Data Science — Harvard University
- Microsoft Power BI Data Analyst Professional — Microsoft — In Progress

References

- Dr. Eric Landis
  Professor of Civil Engineering
  University of Maine
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  Phone: (207) 581-2173
  Relationship: Academic Advisor

- Patrick Lynch
  Principal
  Transpo Group Corporation
  Email: patrick.lynch@transpogroup.com
  Phone: (206) 979-3040
  Relationship: Former Supervisor