Reza V. Mehrizi

Data Scientist, Statistician and Machine Learning Researcher

👤 Profile

With over 8 years of experience in the cutting-edge field of data science, I am deeply passionate about transforming complex data into valuable insights. My dedication lies in exploring advanced statistical, machine learning approaches and leveraging AI techniques to develop innovative solutions. I eagerly embrace complex problems as opportunities to refine my skills, exercise my innovative thinking and deliver exceptional results. I flourish in collaborative environments, valuing diverse expertise and enthusiastically embracing feedback and varying viewpoints. I am excited to be part of an industry that constantly evolves and shapes the future of businesses and societies.

💼 Employment History

Data Scientist at MVS Lab, University of Waterloo

October 2021 – Present

- Developed a streamlined logistics optimization solution leveraging graphical models and ML predictive algorithms, resulting in a remarkable 17% surge in warehouse throughput efficiency.
- Designed and deployed a Deep Learning and Dynamic Bayesian Networks-based fault detection and root cause diagnosis algorithm for the automotive industry, resulting in substantial cost savings and enhanced vehicle reliability.

Statistical Consultant and Teaching Assistant at University of Waterloo

September 2016 – August 2021

- Developed a highly accurate anomaly detection algorithm using statistical and ML methodologies enabling precise disease diagnosis prediction in the healthcare system, particularly for Covid-19.
- Collaborated with Expedia Group, an international shipping company, and a sensor fouling system company to develop machine learning predictive models, resulting in remarkable enhancements in productivity, service quality, and cost-effectiveness.

Faculty Member and Lecturer at Semnan University

September 2010 – August 2016

- Collaborated on statistical analyses of census data for educational and environmental inquiries.
- Designed and implemented a ranking scheme for bank customers.
- Developed a predictive model using operations research and machine learning techniques to forecast price fluctuations in the oil industry.
- Organized and led public seminars and workshops and guided graduate students in completing their research projects.

🎓 Education

Doctor of Philosophy in Statistics, University of Waterloo, Waterloo

September 2017 – August 2021

- Provided expert statistical consultation and collaborative research support to faculty and industry partners.
- Collaborated on a wide range of projects, offering valuable insights and data analysis solutions that facilitated evidence-based decision-making and problem-solving.
- Designed an innovative anomaly detection system for healthcare, predicting trend fluctuations in COVID-19 cases, facilitating proactive decision-making during the pandemic.

Masters in Statistics, University of Waterloo, Waterloo

September 2016 – August 2017

Detail

📍 Waterloo, Canada

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Links

- 🌐 Website
- in LinkedIn
- Ⓢ Google Scholar
- GitHub

Skills

Advanced Statistical Analysis

Machine Learning Algorithms

Deep Learning/ Reinforcement Learning Techniques

Predictive Modeling

Natural Language Processing (NLP)

Data Visualization (Tableau, Matplotlib, Power BI)

Data Preprocessing/Cleaning

Data Mining and Pattern Recognition

Neural Networks and CNNs

Ensemble/Clustering Methods (Random Forest, Boosting)

Bayesian Statistics

Python/R Programming

SQL Database Management

Web Scraping and APIs

Cloud Computing (AWS, Azure)

Anomaly Detection/Root Cause Analysis

Graphical Models

Time Series Analysis

Experiment Design and A/B Testing

Mentoring and advising

Critical Thinking

Effective Communication

✑ Publications

- Shu, K., **Mehrizi, Reza. V.**, Li, S., Pirani, M., & Khajepour, A. (2023). Human Inspired Autonomous Intersection Handling Using Game Theory. IEEE Transactions on Intelligent Transportation Systems.
- **Mehrizi, Reza V.**, and Shojaeddin Chenouri. "Valid post-detection inference for change points identified using trend filtering." arXiv preprint arXiv:2104.12022 (2021).
- **Mehrizi, Reza V.**, and Shojaeddin Chenouri. "Detection of change points in piecewise polynomial signals using trend filtering." arXiv preprint arXiv:2009.08573 (2020).
- **Mehrizi, Reza V.**, Akbar Asgharzadeh, and Mohammad Z. Raqab. "Prediction of future failures times based on Type-I hybrid censored samples of random sample sizes." Communications in Statistics-Simulation and Computation 48, no. 1 (2019): 109-125.
- **Mehrizi, Reza V.**, Mohammad Z. Raqab, Akbar Asgharzadeh, and F. A. Alqallaf. "Estimation and prediction for power Lindley distribution under progressively type II right censored samples." Mathematics and Computers in Simulation 149 (2018): 32-47.
- **Mehrizi, Reza V.**, A. Asgharzadeh, and D. Kundu. "Prediction of future failures for generalized exponential distribution under Type-I or Type-II hybrid censoring." Brazilian Journal of Probability and Statistics (2017): 41-61.
- Asgharzadeh, Akbar, **Mehrizi, Reza V.**, and Mohammad Z. Raqab. "Estimation of Pr (Y< X) for the two-parameter generalized exponential records." Communications in Statistics-Simulation and Computation 46, no. 1 (2017): 379-394.
- Asgharzadeh, Akbar, Hon KT Ng, **Mehrizi, Reza V.**, and M. Azizpour. "Statistical Inference for Lindley Model based on Type II Censored Data." J. Stat. Theory Appl. 16, no. 2 (2017): 178-197.
- Asgharzadeh, Akbar, **Mehrizi, Reza V.**, and Mousa Abdi. "Point and interval estimation for the logistic distribution based on record data." SORT: statistics and operations research transactions 40.1 (2016): 0089-112.
- Asgharzadeh, A., **Mehrizi, Reza V.**, and D. Kundu. "Prediction for future failures in Weibull distribution under hybrid censoring." Journal of Statistical Computation and Simulation 85, no. 4 (2015): 824-838.
- **Mehrizi, Reza V.**, A. Asgharzadeh, and Mohammad Z. Raqab. "Estimation of P (Y< X) for Weibull distribution under progressive Type-II censoring." Communications in Statistics-Theory and Methods 42, no. 24 (2013): 4476-4498.
- Raqab, Mohammad Z., Akbar Asgharzadeh, and **Mehrizi, Reza V.**, "Prediction for Pareto distribution based on progressively Type-II censored samples." Computational Statistics & Data Analysis 54, no. 7 (2010): 1732-1743.
- Asgharzadeh, A., and **Mehrizi, Reza V.**, "Prediction intervals for proportional hazard rate models based on progressively Type II censored samples." Communications for Statistical Applications and Methods 17, no. 1 (2010): 99-106.
- Asgharzadeh, A., **Mehrizi, Reza V.**, and Mohammad Z. Raqab. "Estimation of the stress–strength reliability forthe generalized logistic distribution."Statistical Methodology15 (2013):73-94.
- Asgharzadeh, Akbar, **Mehrizi, Reza V.**, and Mohammad Z.Raqab. "Stress-strength reliability ofWeibulldistribution based on progressively censored samples."SORT-Statistics and Operations ResearchTransactions(2011): 103-124.
- Asgharzadeh,A., Jafar Ahmadi, Z. Mirzazadeh Ganji,and **Mehrizi, Reza V.**, "Reconstruction of the past failuretimes for the proportional reversed hazard rate model."Journal of Statistical Computation and Simulation82,no.3 (2012): 475-489.

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