

# 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](#)
-  [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 for the generalized logistic distribution." Statistical Methodology 15 (2013): 73-94.
- Asgharzadeh, Akbar, **Mehrizi, Reza V.**, and Mohammad Z. Raqab. "Stress-strength reliability of Weibull distribution based on progressively censored samples." SORT-Statistics and Operations Research Transactions (2011): 103-124.
- Asgharzadeh, A., Jafar Ahmadi, Z. Mirzazadeh Ganji, and **Mehrizi, Reza V.**, "Reconstruction of the past failure times for the proportional reversed hazard rate model." Journal of Statistical Computation and Simulation 82, no. 3 (2012): 475-489.

View More Publications on [Google Scholar](#).

## Hobbies

Yoga/Meditation

Martial arts/self-defence training

Volunteering

Studying Neurology

Traveling/Camping

Playing Tennis/Soccer/Volleyball

Hiking/Biking