Ali Raisolsadat (MMATH, BSc)
Ontario, Canada | (902) 940-6492 | Canadian Citizen
arraisolsadat@uwaterloo.ca | LinkedIn Profile | GitHub

SUMMARY OF QUALIFICATIONS

- Strong quantitative background with a Master of Mathematics in Computational Mathematics (90%) from the University of Waterloo and dual BScs in Financial Mathematics (85%) and Actuarial Science (95%) from the University of Prince Edward Island.
- 2+ years of experience in quantitative research, including financial modeling, insurance policy reimbursement forecasting, and developing novel mathematical methodologies for climate and weather-related insurance products.
- Proven leadership and communication abilities, having led the climate policy team for over half of the research project at the Canadian Centre for Climate Change and Adaptation.
- Proficient in R (4+ years) and Python (2+ years) for data analysis, modeling, and visualization.
- Experienced with MS Office Suite, SQL (PostgreSQL, ETL) and Java for backend development and data processing.
- Presented complex research on insurance and mathematical modeling at international conferences to academic and policy audiences.

RELEVANT EXPERIENCE

Canadian Centre for Climate Change and Adaptation – Charlottetown, PEI Summer 2021, 2022, 2024
Data Scientist

- Spearheaded a research project with the climate policy team to quantify international cooperation among G7 nations using the United Nations Sustainable Development Goals (SDG) data.
- Constructed ML algorithms such as LASSO, Ridge regression, and PCA for data analysis and feature extraction.
- Ensured data quality and compliance using GitHub for version control and manual dataset validation.
- Presented out findings at the *25th International Congress on Insurance: Mathematics and Economics (IME Conference 2022)*, demonstrating strong skill in presenting complex mathematical models to large audiences and published this research in the prestigious *Nature Communications* journal.

University of Waterloo – Waterloo, ON May 2023 – September 2023
Research Assistant

- Developed an insurance product to manage climate-related losses, enabling data-driven decisions on loss retention and reinsurance risk transfer.
- Utilized finite difference methods and non-linear regression to classify and forecast loss layers, enhancing accuracy with 'near max/min' indicators.
- Built a risk management framework in R, integrating results into my thesis to guide asset allocation.

Veterans Affairs Canada – Charlottetown, PEI May 2020 – September 2020
Research Assistant

- Analyzed published research and existing statistical models to evaluate methods for forecasting insurance reimbursement volume and value, identifying the most effective approach for policy analysis.
- Led a longitudinal study forecasting insurance reimbursements for veterans' medications using ARIMA, AR and MA time series models in R, generating a 5-year forecast with 95% confidence intervals.
- Presented findings to the research team through an interactive RShiny dashboard.

University of Prince Edward Island – Charlottetown, PEI Summer 2018, Summer 2019
Quantitative Researcher

- Constructed a novel geometric risk measure (other than VaR and CVaR) for portfolio construction that incorporates probable asset price paths.
- Conducted sensitivity analysis to assess how varying volatility and correlation assumptions impact portfolio risk, enhancing model robustness and investor decision-making.
- Applied Monte Carlo simulations, SDEs, and Black-Scholes-based replication models using R, Python, and MATLAB.
- Awarded second place in the Statistics division at *Science Atlantic 2018* for presenting this research.

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Agriculture and Agri-food Canada – Charlottetown, PEI Summer 2017
Administrative Assistant

- Successful organization of Agriculture Canada's semi-annual open house event, ensuring smooth coordination and logistics.
- Maintained and updated the department's phone directory with precision using Microsoft Excel, improving internal communication efficiency.

TEACHING EXPERIENCE

- Teaching Assistant, University of Waterloo September 2022 – May 2023
- Teaching Assistant and Personal Tutor, University of Prince Edward Island September 2015 – May 2019
- Citizenship Class Teacher, PEI's Newcomers Association September 2015 – July 2018

EDUCATION

Master of Mathematics (MMATH) in Computational Mathematics, 4.0 GPA September 2022 – October 2023
University of Waterloo, Ontario, Canada

- **Relevant Courses:** Data Visualization, Exploratory Data Analysis, Numerical Analysis and Solutions in Partial Differential Equations (MATLAB), Numerical Solutions to PDEs, Neural Networks (PyTorch, NumPy, Pandas)
- **Certificates**: Google Data Analytics Professional Certificate (R, SQL, Google Sheets), DataCamp (Associate Data Analyst in SQL, Data Analyst in Python, PyTorch for Neural Networks and Large Language Models, Hugging Face)

Bachelor of Science in Actuarial Sciences, 4.0 GPA September 2020 – May 2022
University of Prince Edward Island, PEI, Canada
Relevant Courses: Short-term and Long-term Loss Modeling, Actuarial Pricing and Reserving, Data Structures (Java), Microsoft Excel and VBA Lab, Mathematical Probability.

Bachelor of Science in Financial Mathematics, 3.5 GPA September 2014 – May 2019
University of Prince Edward Island, PEI, Canada
Relevant Courses: Financial Mathematics I (Interest Theory), Financial Mathematics II (Discrete Financial Modeling), Financial Mathematics III (Continuous Financial Modeling), Financial Economics, Stochastic Processes, Linear Algebra I-II

PUBLICATIONS

1. Risk Layering - A Loss Classification Approach
1. Quantitative Assessment of The Group of Seven's Collaboration in Sustainable Development Goals (DOI: 10.1038/s41467-024-51663-5)

AWARDS

Fong Computational Math Graduate Award ($7,500), Graduate Honors 90% GPA average standing, Best Teacher Assistant Award, *Natural Sciences and Engineering Research Council of Canada (NSERC) Grant* ($10,000), Undergraduate Dean's List for 95% GPA average standing, *Harry MacLauchlan Memorial Award in Mathematics* ($1280)