Joseph (Luke) Rivard
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Actuarial Exams

Exam FM	Passed April 2021
Exam P	Passed July 2021
Exam MAS-I	Passed October 2021
Exam IFM	Passed November 2021
Exam MAS-II	Passed May 2022
Online Course 1	Passed May 2022
Online Course 2	Passed July 2022
Exam 5	Passed May 2023
Exam 6	Sitting Fall 2024

Technical Skills Course by [TIA](#)   Completed September 2021

Education

B.Sc. Mathematics & Computer Science, McMaster University   Expected 2024
+ Minors in Economics, Finance, Statistics and CGPA of **3.91/4.00**
+ Near [ACAS](#) in **50%** less time than [average](#) full-time candidates.   Expected 2024
+ Ontario Conference of Casualty Actuaries Scholarship   Granted 2022

M.Math. Master of Mathematics in Computer Science, University of Waterloo   Expected 2026
+ Research Area: Communication between LLM's. [Supervisor](#)

Work Experience

Junior Data Scientist (May 2023-August 2023) Definity Financial, Waterloo Ontario
-      Helped support and encourage team to migrate our machine learning models to GCP. Demonstrated that is effective to have models in the cloud vs local. Achieved this by creating a decision tree model in the cloud and explaining the results, process and ease of use.
-      Discovered large areas of improvement in one of our personal auto insurance DGLM models and completely rewrote the entire model to ensure future maintainability and boosted results significantly in prediction lift charts to help us better segment claims.

Actuarial analyst (Jan 2022-August 2022) Definity Financial, Waterloo Ontario
-      Controlled project to develop new monthly policy inforces in collaboration with our modeling team in SQL. Reduced our policy inforce run/download time from two days to just twenty minutes.
-      Worked on PPV major filing, segmented differentials in our pricing model and identified levels that we should adjust to improve profitability based on theoretical, experience loss ratios, credibility and competitive information. Produced final proposal and presented results to team.

General laborer (2017-2019) Anmar Mechanical & Electrical Contractors Ltd, Hamilton Ontario

Projects

ChatGPT vs Amazon Review Scores (2023)
-      Gathered predicted rating scores from open AI API (ChatGPT 3.5) and compared to predictions from home made machine learning models using xgboost and pytorch. Results are available on [GitHub](#) and pointed to ChatGPT being impressively accurate in binary reviews and disappointing in score prediction.

Multi inference LLM with implicit chain of reasoning (2023)
See [GitHub](#). Referenced this [paper](#) and expanded it to train a new gpt-2 LLM that solves simultaneous 2 digit by 2-digit multiplication using implicit chain of reasoning. Notebook with instructions/visuals is available.

Skills

Packages: pandas, pytorch, sklearn, xgboost, numpy, matplotlib. Strong in Python, Microsoft Word, Excel, SQL and PowerPoint. Knowledgeable in R, Java, Git and Google cloud platform. Completed 50 [leetcode](#) problems.