Shilun (Sherry) Dai

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QUALIFICATIONS

- Passed SOA P & FM / CAS Exam 1 & 2, and SAS Base *May 2020 – Nov. 2020*
- Sitting for SOA Exam IFM / CAS Exam 3F, and SAS Advance *Sept. 2022 – Dec. 2022*
- Skills: Python (PyTorch, JAX), R (tidyverse, dplyr), SAS, SQL, Power BI, Microsoft Excel (VBA, pivot table), Radar

EDUCATION

Department of Statistics, University of Toronto   **Toronto, Canada**

Bachelor of Science, Actuarial Science Specialist and Statistic Science Major   *Sept. 2018 - Jun. 2023*

PROFESSIONAL EXPERIENCE

Munich Reinsurance Company of Canada   **Toronto, Canada**

Actuarial Co-op – Property & casualty Reserving & IFRS 17 Team   *Sept. 2022 - Apr. 2023*

- Developed a R program to summarize cash flows to a particular granularity and compared them under IFRS 4 and IFRS 17, utilized Power BI to visualize cash flow patterns across several quarters and lines of business
- Supported the 2022 Appointed Actuary Report by conducting stress test, including financial condition test and scenario test, justifying the methods used, and reconciled data in report with Excel

Intact Financial Corporation   **Toronto, Canada**

Actuarial Analyst Intern – Commercial Lines Automobile Actuarial Pricing Team   *May 2022 – Aug. 2022*

- Extracted Motor Vehicle Records data in SAS, investigated reasons for broker orders going over budget, exported data to Excel for cost analysis, reducing total loss by 13%
- Imposed SQL to eliminate the endorsement calculation errors in Auto Strategy Monitoring Report, reconciled the outcome with system files in Excel, and improved the Execution by 9.8%

The Wawanesa Mutual Insurance Company   **Toronto, Canada**

Actuarial Intern – Enterprise Risk Management Department   *Jan. 2022 – Apr. 2022*

- Enforced VBA to execute sensitive test which investigates the factors that significantly affect final indication value, created bottoms to automate the whole procedure in Excel, saving 90% of the labor for the following year
- Implemented Radar to perform reinsurance earthquake data review, identified invalid sources or data fields, and documented from completeness, accuracy, and consistency perspectives to reveal potential implications and ramifications

Guorong Securities   **Hangzhou, China**

Product Manager Assistant   *Jan. 2020 – Apr. 2020*

- Monitored capital flow and data classification, checked abnormal data or outliers, and completed relevant reports
- Created individual stock benefit models and portfolio strategies, optimized investment portfolios

PROJECT EXPERIENCE

Trading financial derivatives on RPM   **Toronto, ON**

Independent work   *Jul. 2022 – Aug. 2021*

- Consulted the 10 companies' annual financial reports and investigated the historical stock prices of related commodities, exchange rates, and other assets to determine whether to hedge or speculate
- Priced financial derivatives using the Black-Scholes model and designed portfolios incorporating options and futures, executed the strategies using NASDAQ ticker symbols in RPM
- With the allotted $200 million dollars in RPM, the account ended up with $242 million dollars and the report achieved first place in the class with a grade of 93

Research on Alter Heterogeneity   **Toronto, ON**

Group member   *May 2022 – Aug. 2022*

- Selected the PATHMNIST dataset with obvious differences in the average pixel intensity values, utilized Python to split the training dataset into 4 groups based on their labels
- Applied Cochran's Q as a metric to describe between-group heterogeneity and measured the deviation of each group's mean from the grand, used the average pixel intensity of each image as the population descriptor
- Implemented K-means clustering analysis to record the predicted accuracy of each cluster, reported the coefficients of variation (CV) accordingly to measure the heterogeneity described by CNN image features
- Cochran's Q was proved to be a plausible metric in quantifying the between-group and it has a positive correlation with CV

Analysis of reserving for Medical Rehabilitation and Direct Compensation   **Toronto, ON**

Group Leader   *Oct. 2021 – Nov. 2021*

- Enforced Excel to build development triangles, selected loss development factors (LDFs) from age-to-age factors in each maturity period to represent future trends of ultimate claims, IBNR etc., adjusted ultimate claims by LDFs
- Exercised Chain Ladder method, Loss Ratio method and Bornhuetter-Ferguson method to project ultimate claims
- Documented and present the methods and results in class, achieved a grade of 91% which is top 3 of the class

Research on the Intention of US President Election in 2020   **Toronto, ON**

Group Member   *Oct. 2020 - Nov. 2020*

- Implemented R to fit 2020 survey data of 64,798 U.S. citizens into a multilevel logistic regression
- Utilized post-stratification method to partition survey data into demographic cells based on explanatory variables, which improves the efficiency of estimators by summing the cell estimates as adjusting weights for different states
- Applied the obtained weights to the model using 2018 population data, summed up the electoral votes from each state if the probability of voting Donald Trump is greater than 0.5
- The prediction of the final result is only 37 votes different from the actual outcome

EXTRACURRICULAR ACTIVITIES

TCS Toronto Waterfront Marathon   **Toronto, Canada**

Volunteer   *Oct. 16, 2022*

- Assisted as a course marshal at the 33 TCS Toronto Waterfront Marathon
- Made sure the course route was safe for participants, guided them along the route, supported pedestrians and vehicles in navigating road closures, and was a positive ambassador for the race

Pride Toronto   **Toronto, Canada**

Volunteer   *Jun. 2022 – Jul. 2022*

- Supported LGBTQ2S+ family, guided the Parade team, answered questions at Street fair

Maixi Primary School   **Shanxi, China**

Volunteer   *May 2021 - June 2021*

- Taught Computer science and Statistic science using PowerPoint, organize 1-1 office hours, benefited 50+ students

Chinese Volunteer Association, University of Toronto   **Toronto, Canada**

President   *Sept. 2019 - May 2020*

- Initiated Reading Week Camping and Food Festival activities, cooperated with 7 departments, raised $3000+ donations

Recognized Study Group, University of Toronto   **Toronto, Canada**

RSG Leader   *May 2018 – Aug. 2019*

- Led the group in course material study and collaborative question-answering sessions prior to the midterms and final exams
- Gathered unresolved questions and sent them to professors/course instructors

INTERESTS

- Interests: Scuba Diving (PADI Open Water Diver & PADI Dry Suit Diver), rock-climbing, snowboard