**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 (pivot table, VBA), Radar

**EDUCATION**

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

*Bachelor of Science, Actuarial Science Specialist and Statistic Science Major**Sept. 2018 - Apr. 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, and then utilized Power BI to visualize patterns across several quarters and lines of business
* Supported the 2022 Appointed Actuary Report by gathering financial statement data, justifying the procedures used, and comparing data in tables with files

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 10%

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, utilized stratified sampling and multi-factor linear model index enhancement strategies, reduced transaction costs, and optimized investment portfolios

**PROJECT EXPERIENCE**

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

*Independent work* *Jul. 2022 – Aug. 2021*

* Consulted the companies’ annual financial reports to determine whether to hedge or speculate for the 10 companies
* Priced financial derivatives using the Black-Scholes model and designed portfolios incorporating options, spreads, combinations, and futures
* Investigated the historical stock prices of commodities, exchange rates, and other assets, executed the strategies using the NASDAQ ticker symbol in RPM, and monitored the portfolio actively
* 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 the relationship between CNN heterogeneity and between-group heterogeneity Toronto, ON**

*Group member* *May 2022 – Aug. 2022*

* Selected the PATHMNIST dataset containing adipose tissue, background, debris, and CRC epithelium which shows obvious differences in the average pixel intensity values
* Utilized Python to split the training dataset into 4 groups according to 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 and 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 and increased the sample size, and repeated the previous steps
* 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, applied several diagnosis methods, and concluded the age-to-age factors regarding reported/paid claims/counts
* Selected age-to-age factors in each maturity period which represent future trends as loss development factors (LDFs), adjusted ultimate claims/count by LDFs
* Exercised Chain Ladder method, Loss Ratio method, Bornhuetter-Ferguson method, and Expected method to project ultimate claims
* Documented the methods and results, accomplished a presentation using PowerPoint and a real-time Q&A with professors, achieved 90% marks which are 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 which contains age, education, income and etc 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 in order to calculate the probability of supporting Donald Trump in each state
* 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*

* Being a volunteer to assist 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

**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**

*Team Leader* *May 2019 – Aug. 2019*

* Leaded the team to study the course materials and work together to answer questions, held the review sessions before the midterm and final exam
* Collected unsolved problems and forwarded them to professors/course instructors

**INTERESTS**

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