

# Shilun (Sherry) Dai

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## QUALIFICATIONS

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- 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

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**Department of Statistics, University of Toronto** **Toronto, Canada**  
*Bachelor of Science, Actuarial Science Specialist and Statistic Science Major* Sept. 2018 - Jun. 2023

## PROFESSIONAL EXPERIENCE

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**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

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**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 the relationship between CNN heterogeneity and between-group 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**

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### **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**

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