MASTERS OF financial insurance

MFI candidates 2023 - 2024

Statistical Sciences
UNIVERSITY OF TORONTO

What our industry partners say about MFI students:

"Very impressed by the superb technical skill, creativity, and professionalism shown by the MFI student we hired for the summer internship..... The work exceeded my expectations."

Emile Elefteriadis, Swiss Re

"Iris made an immediate contribution towards automating our reporting processes such as model characteristic analysis. She brought a great attitude regardless of what she was assigned."

Sean Myers, BMO

"Boris has been a great addition to the team, we appreciate having him share his expertise in programming and analytics. It's been a pleasure working with him over the past few months, he has a great attitude and is always willing to help. We anticipate that he will have a very successful career ahead."

Lisa Cicoria, BMO

"Huan has advanced analytical and learning ability that I am sure the MFI program greatly prepared her for. I wish I learned of the program and the student list earlier."

Roland Xu, RBC Insurance

Contents

Message from Program Director

Launched in September 2016, the Master of Financial Insurance (MFI) program addresses the growing industry demand for professionals with expertise at the confluence of Data Science, Insurance, and Mathematical Finance. Since its inception, the MFI program has rapidly expanded, producing highly sought-after professionals in sectors such as finance, insurance, fintech, pensions, and consulting. The 2024 cohort, carefully selected from a competitive pool of applicants, features 28 candidates with a low acceptance rate of under 10%, maintaining a balanced gender distribution.

Our students benefit from a dual educational approach: they receive theoretical instruction from globally recognized academics in the Department of Statistical Sciences, which ranks among the top 10 in the world according to the Shanghai Rankings. Simultaneously, they gain practical insights from accomplished industry professionals, enhancing their problem-solving skills and industry acumen. This blend of academic and industry exposure equips our students with unique insights and insider knowledge.

The MFI Team, Sarah, Shari, and I, remain dedicated to nurturing and expanding our network of industry collaborators. We proudly offer students the opportunity for summer internships, or longer durations, which not only furthers their professional growth but also enriches your organization.

Andrei Badescu, Professor and Director of the MFI Program

Program Outline

The Department of Statistical Sciences offers the Master of Financial Insurance Program (MFI), a full-time professional program focused on producing students who will become leaders in the global finance, fintech, and insurance industry. The program stands on three pillars: data science, financial mathematics, and insurance modeling. It provides students with education at the interface of these domains with sufficient depth and breadth so that students can provide both detailed analysis of finance and insurance risks, as well as provide a bird's-eye perspective on how the embedded risks affect the firm enterprise wide.

The program is particularly appropriate for students with backgrounds in statistics, actuarial science, economics, and mathematics, or students with a quantitative background (such as those in physics and engineering). While students have different backgrounds coming into the program, they are trained together as one cohort. In the first semester, students are exposed to core theory and methodology, in addition to numerous industrial seminars. While in the second semester, they work on a variety of case studies and projects led by industry professionals.

The MFI Program runs for 12 months, from September to August. Students take academic courses in the first two terms with the program culminating in a 16 week work-term placement designed to provide real-world experience in finance and/or insurance. **As an added bonus students are ready to start full time work or extend their contracts into September!**

SEPTEMBER TO DECEMBER (Term 1)

JANUARY TO APRIL (Term 2)

MAY TO AUGUST (Term 3)

FROM SEPTEMBER AVAILABLE FOR FULL TIME WORK!

TERM 1

Applied Probability for Mathematical Finance
Applied Time-Series Analysis
Life Insurance Mathematics
Data Science for Risk Modeling
Industrial Seminar Series (Part 1)

TERM 2

Financial Risk Management
Finance and Insurance Case Studies
Numerical Methods for Finance & Insurance
Data Science in Practice
One Elective Course in a Related Topic
Industrial Seminar Series (Part 2)

Foundation of Program

Traditionally, the finance and insurance worlds are quite distinct, but this distinction is disappearing. Financial firms are taking exposure to insurance risks, insurance companies are providing guarantees to their clients that fundamentally intertwines them with the financial markets, and pension plans provide income guarantees which profoundly link their obligations to the these markets. The Masters of Financial Insurance (MFI) program answers the growing need from industry to fulfil this unique skill set.

The MFI is a professional program that provides candidates with a sophisticated understanding of this complex interaction of the financial and insurance fields. The program contains a comprehensive set of offerings and students gain rigorous training in data science, actuarial science and finance. Graduates from this program are versatile and well armed to face the highly skilled work required of them in the banking, insurance, pension, fintech, and consulting industries.

Hiring a Work Term Student

You can test drive new "pre-professionals" through a cost effective, risk free environment and also shape the training of future professionals by offering feedback to the program. Bringing an MFI graduate student on board for a work placement either for the summer term or in an extended contract – as the students are available for full time, or longer term contract employment immediately after the summer – is an excellent way to connect with emerging high achieving professionals, and bring new thinking and strategy to your organization.

The students presented in this resume book will be well-prepared to bring their competencies, knowledge and expertise to your organization over the summer term (May-August), and beyond!

Partners and Supporters from Industry

We are immensely grateful for the interest and enthusiasm shown by our ever increasing industry partners in supporting the next generation of industry professionals.

Allianz
Allstate
Aon
Aon Pathwise ™
AxiomSL
Bank of Montreal
Banking Books Analytics
Berkshire Hathaway Group Reinsurance
Canada Life
Canada Mortgage & Housing Corporation
Coinsquare
Cooperaters
CI Investments
CIBC
CITI
CPPIB
Deloitte
d1g1t
Forester's Financial
Founder Securities
Great-West Life
Hannover Reinsurance
HOOPP
IBM
Intact
Kroll
Manulife
Modellicity
Moody's Analytics
Munich Reinsurance
Oanda
Oliver Wyman
Ontario Ministry of Finance
Ontario Teachers' Pension Plan
OPSEU Pension Trust (OPTrust)
OMERS
Proviti
Polar Asset Management
Purpose Investments
PwC
Roche
Royal Bank of Canada
RBC Insurance
RSA
Soochow Securities
Scotiabank
Sun Life Financial
Swiss Reinsurance
TD Bank
TD Insurance
TMX
University Pension Plan
Wawanesa
Willis Towers Watson

Ways to Get Involved

The MFI Team has been impressed by the enthusiasm and support given by industry partners. You can be involved not only by providing summer work terms for our candidates but also in other ways:

- **Attending our annual fall reception**
- **Delivering a guest lecture to our students**
- **Hosting a company tour or information session**
- **Participating on a Panel Discussion**
- **Sponsoring MFI events such as the MFI Fall Reception or Alumni Socials**
- **Mentoring a student**
- **Providing an informational interview**
- **Offering mock interviews and feedback**
- **Hosting an on-campus information session**
- **Hiring a recent graduate**
- **Participating on an advisory board**

What Industry Partners Have To Say

"Thank you, team MFI at the University of Toronto, for creating an amazing program with bright, well rounded, hard-working students with amazing knowledge and technical skills, ready to contribute in today's data driven world. Your program is directed by a group of amazing people who are a true pleasure to deal with and make it simple to communicate. Our MFI intern (Jiayan Yang) was ready to contribute from day one. In her role, Jiayan was involved in creating multiple strategic predictive models and heavily engaged in automating a reporting package... Her technical skills are exactly what today's analytical world requires. Jiayan surely exceeds my expectation and that's why she was offered a second work term with our organization. Thank you Jiayan and team MFI!"

Artur Liwski, BMO

"Thank you, team MFI at the University of Toronto, for creating an amazing program with bright, well rounded, hard-working students with amazing knowledge and technical skills, ready to contribute in today's data driven world."

"The MFI program provided me with key skills and confidence that helped prepare myself better for entering the industry. In recent years, I have hired several new graduates from the MFI program, and can say with confidence that the program continues to prepare well-rounded individuals, who have the ability to provide meaningful contributions to their teams and be successful in their careers."

Alexey Pakhuchiy, MFI 2017 & TD

For anyone who wishes to develop a very strong foundation of financial mathematics and insurance and gain the skills to apply them in the real-world, I strongly recommend UT's MFI program!"

Working with the MFI students was a real delight. I saw no shortage of creativity, curiosity, and teamwork. I was also very touched when some of my students reached out to me after this course and told me that they've gotten amazing positions and benefited greatly from the course and program. For anyone who wishes to develop a very strong foundation of financial mathematics and insurance and gain the skills to apply them in the real-world, I strongly recommend UT's MFI program!"

Basil Singer, CEO, Modellicity Inc.

Student Profiles

Please Note:
The student profiles featured here are an overview.

If you wish to review the full résumé of any of our talented cohort please contact the MFI Office

(mfi.info@utoronto.ca)

Nicholas Adegbe

Nicholas is an exceptional student and MasterCard Foundation Undergraduate and Graduate Scholar. Having an educational background in actuarial science, he also has hands on experience in the field of data analytics, data visualization and reporting. In addition Nicholas has great presentation skills and relationship-building aptitude that cultivate brand loyalty and enthusiasm.

EDUCATION

Master of Financial Insurance
University of Toronto
2023 - 2024
MASTERCARD FOUNDATION SCHOLAR

BSc (Honours)
Actuarial Science
Kwame Nkrumah University of Science and Technology (KNUST)
2023

SKILLS

Technical: R; MATLAB; Python; AXIS; SAP ERP; Microsoft 365

PROFESSIONAL CERTIFICATES/AWARDS

MasterCard Foundation Scholarship: 2018-2024
Vice Chancellor's Award (KNUST) for Community Impact: 2019

INTERESTS/ACTIVITIES

Soccer; Volleyball; Entrepreneurship; Community Impact

EXPERIENCE

AI-Society, KNUST, Ghana — Jan. 2023-Present
Co-Founder
- Empower college students who have passion for AI & Data Science by linking them to industry opportunities

EdPlus at Arizona State University — Mar. 2022-Present
Baobab Community Guide
- Facilitate information sessions about the platform's opportunities, & increasing access to career prospects for Africans
- Build relationships with consumers to create loyalty & passion for the brand
- Create an environment for young people to share ideas, increasing project collaboration & partnerships

Mpharma Ghana — Nov. 2022-Jul. 2023
Inventory Analyst
- Analyzed & visualized inventory ensuring product availability & supply optimization
- Processed & managed orders using SAP ERP software
- Compiled supply chain reports in Excel on product performance & fulfillment rates for managerial purposes

Project: Modelling Insurance Claim Severity Using Industrial Statistical Distributions
- Predicted claim severity patterns, contributing to a deeper understanding of risk assessment & management

Project: Life Insurance Pricing & Portfolio Optimization
- Devised pricing & portfolio investment strategies for a whole life insurance product

David Gameli Agbeko

David has a deep-seated interest in actuarial science, statistics, data science, and finance. He exudes high energy in the face of challenges and quickly adapts to new working environments while striving to become better at what he does. He is an author, entrepreneur and youth empowerment advocate.

EDUCATION

Master of Financial Insurance
University of Toronto
2023 - 2024
MASTERCARD FOUNDATION SCHOLAR

BSc (Honours) Actuarial Science
Kwame Nkrumah University of Science & Technology (KNUST)
2021

SKILLS

Technical: Python; R; AXIS; SQL; Excel; Microsoft 365

PROFESSIONAL CERTIFICATES/AWARDS

Mastercard Foundation Scholarship: 2017-2024

INTERESTS/ACTIVITIES

Writing (Author and Editor): Author of "Winning Transition Battles"

President and Founder of Edu-Consult Africa

Community Outreach and Volunteering
Conference Speaker and Master of Ceremony (MC)

EXPERIENCE

Project: MFI Summer Group Project — Summer 2023
- Evaluated pricing of relevant life insurance products, forecasted reserves, analyzed profit at the portfolio level & conducted investment strategy using mean-variance optimization analysis
- Presented results & findings to the elite faculty of MFI

McGill University Faculty of Agriculture & Environmental Science, Quebec, Canada — Dec. 2022-Aug. 2023
Project Assistant (Remote)
- Assisted in USAID Grant applications for the McGill partners' scholarship, internship, & entrepreneurship project
- Increased accessibility of students to internship opportunities by creating a database of approximately 60 agri-food industries
- Conducted research & outlined practical solutions in addressing challenges confronting internship acquisitions
- Part of a team of developers to create content for the McGill-Ghana collaborative project website

International Programs Office (IPO), KNUST, Kumasi, Ghana — Nov. 2021-Nov. 2022
Inbound Exchange Officer
- Developed the first Fact Sheet for planning, execution & effective information dissemination to KNUST partners
- Assisted in presentations to the KNUST community that increased awareness & patronage of the IPO services

Paul Agbekpornu

Ambitious, talented, and results-oriented, Paul holds a Master's degree in Mathematical Statistics and Sciences. His career objective is to apply his expertise on the application of statistical machine learning and stochastic analysis. He has proven interpersonal and time management ability developed through academic projects, work and volunteer experience.

EDUCATION

Master of Financial Insurance
University of Toronto
2023 - 2024
MASTERCARD FOUNDATION SCHOLAR

MPhil Research Master's
Mathematical Statistics
Kwame Nkrumah University of Science & Technology (KNUST)
2023

MSc Mathematical Science
African Institute for Mathematical Science (AIMS)
2020

BSc (Honours)
Actuarial Science
Kwame Nkrumah University of Science & Technology (KNUST)
2018

SKILLS

Technical: R; Python; AXIS; Microsoft 365

PROFESSIONAL CERTIFICATES/AWARDS

MasterCard Foundation Scholarship - UofT: 2024
AIMS Scholarship: 2019

INTERESTS/ACTIVITIES

Soccer; Volleyball; Penny Smiles Foundation

EXPERIENCE

Project: Classification and Prediction of the VIX - Volatility Index [UofT] — Sep. 2023-Oct. 2023

- Investigated the correlation between the S&P 500 Index (SPX) & the Volatility Index (VIX) over 10-year period using datasets from Yahoo Finance
- A Gaussian Mixture Model (GMM) was used to capture latent patterns within the VIX index

Project: Estimating Premium & Benefit Reserve [UofT] — Jul. 2023-Sep. 2023

- Calculated augmented expense premiums using the normal approximation method
- Forecasted the benefit reserve at the end of each month for the first five years
- Predicted, simulated & compared the profit of the whole life & endowment life insurance using Python

MPhil Research Project: Application of Bootstrap Methods to Risk Theory (Insurance & Reinsurance) [KNUST] — Jan. 2021-Mar. 2023

- Compared the premium setting principles of simulated data-set of Log-normal, Gamma, Exponential & Pareto distributions using R
- Examined excess of loss reinsurance using bootstrap approach & measured their riskiness to the insurer & re-insurer
- Utilized bootstrap approach to predict the premium price of general insurance products using scarce data-set

Prudential Life Insurance Ghana (PLIG) — Jul. 2020-Jul. 2021
Financial Consultant

- Ensured clients were adequately covered against illness or accident through appropriate insurance coverage

Jiarun Chen

Graduating in Applied Mathematics in Probability and Statistics, Jiarun has accumulated an extensive amount of experience from tutoring high level statistical courses to the completion of projects analyzing and processing data. Having strong analytical, planning and administrative skills, Jiarun can maintain efficiency and initiative when working independently and in teams.

EDUCATION

Master of Financial Insurance
University of Toronto
2023 - 2024

BSc (Honours)
Mathematics & its Applications Specialist
Major in Statistics
University of Toronto
2022

SKILLS

Technical: Python; R; MATLAB; SAS; Excel VBA; SQL; LaTeX; AXIS; Microsoft 365

PROFESSIONAL CERTIFICATES/AWARDS

Bloomberg Market Concepts Certification
IBM Data Analysis with Python Certification
SAS Certified Specialist: Base Programming 9.4
SAS Certified Advanced Programmer for SAS 9
University of Toronto Scholar 2018
Duke of Edinburgh's Bronze Award 2018

INTERESTS/ACTIVITIES

Tutor: 4+ years for university level mathematics & statistics [200 students]

EXPERIENCE

MFI Summer Project, UofT — Summer 2023

- Worked on a case study in a group, for which an insurance company's scenario is given
- Completed profit & mean-variance optimization analyses, making predictions on the portfolio
- Carried out simulation processes using R, Excel, & Python
- Presented report and findings to the professors

Toronto Smart Digital Homes — Sep. 2022-Nov. 2022
Data Analyst

- Examined & quantitatively analyzed general trends in contemporary smart technology industry
- Sourced & gathered relevant datasets, cleaned information & performed analysis to gain insights into smart applicant users
- Delivered detailed presentations & reports to highlight commonalities amongst smart technology users & general increasing trend of consumption regarding smart appliances
- Actively participated in meetings & data mapping sessions to understand business needs & create action plans

CAS Summer Program — Jun. 2021-Aug. 2021
Mentee

- Applied advanced Excel skills to the actuarial field with the study of specific practices
- Worked effectively in a team to examine real-life actuarial & statistical cases using Excel, such as analyzing admission rates of United States universities
- Presented findings & discussed improvements using alternative approaches in different scenarios

Yifan Cheng

With a background in Statistics and Mathematical Science, Yifan has a strong career interest in data and financial analysis. He has excellent communication skills developed through case presentations and work experience, with proven problem-solving and time-management skills to meet tight deadlines.

EDUCATION

Master of Financial Insurance
University of Toronto
2023 - 2024

BSc (Honours)
Statistics
Minor in Mathematical Science
University of Toronto
2023

SKILLS

Technical: Python; R; SQL; Excel; AXIS; Microsoft 365

PROFESSIONAL CERTIFICATES/AWARDS

Dean's List Scholar: 2023

INTERESTS/ACTIVITIES

UofT Badminton Club: 2019 - 2023

EXPERIENCE

University of Toronto — Sep. 2022- Apr. 2023
Teaching Assistant (Applied Probability)
- Delivered tutorials, office hours & graded projects & exams for 150+ students
- Assisted students in understanding subject materials & responded to questions via discussion board
- Updated materials to ensure lectures are targeted to students by highlighting the most critical take-aways

NewBreak, Mountain View, U.S. — Aug. 2022- Sep. 2022
Data Analysis (Remote)
- Performed detailed analysis of 1,000,000+ sample data to explore & evaluate the click-through rate
- Developed R codes to illustrate the demographic composition of users in sample data
- Provided valuable insights & data-driven recommendations to product teams

University of Toronto — May 2022- Aug. 2022
Research Project Assistant
- Simulated one example in the paper by Monte-Carlo simulation about one-sample test for proportion
- Analyzed the primary works of other key authors during the same period to look for parallels with the topic
- Collaborated with other team members to evaluate the literary works

Bolun (Sam) Cui

With more than two years working experience at various companies in the insurance industry, Sam is a passionate, dedicated, and detail-oriented actuarial professional with the ability to learn and adapt in a fast-paced environment. He also has demonstrated strong problem-solving, time-management, and interpersonal skills.

EDUCATION

Master of Financial Insurance
University of Toronto
2023 - 2024

BMath (Honours)
University of Waterloo
2023

SKILLS

Technical: Python; R; C/C++; SQL; SAS; Excel VBA; Qlikeview; AXIS; Microsoft 365

PROFESSIONAL CERTIFICATES/AWARDS

Society of Actuaries
P (Probability);
FM (Financial Mathematics);
IFM (Investment & Financial Markets);
LTAM (Long-Term Actuarial Mathematics);
SRM (Statistics for Risk Modelling);
FAM-S (Fundamentals of Actuarial Mathematics - Short-Term)

INTERESTS/ACTIVITIES

UW ActSci Club Mentor;
Guitar; Piano; Skiing; Breakdancing

EXPERIENCE

Moody's Analytics, Toronto — May 2023- Jul. 2023 & May 2022- Aug. 2022
Actuarial Software Programmer
- Enabled "Reserve Components" calendar year report in Universal Life module under dynamic valuation in AXIS
- Developed a new Calendar year report named "User Defined Category Details" in AXIS
- Fixed & self tested 3+ existing bugs found by clients in AXIS

ivari, Toronto — Sep. 2021- Dec. 2021
Corporate Actuarial Assistant
- Assisted in the Quarter End Valuation process & IFRS 17 Change management using AXIS & Excel
- Developed VBA macro tools to automate the Risk Integrity system reconciliation process

Aviva, Toronto — Jan. 2021- Apr. 2021
Pricing Actuarial Analyst
- Automated the Group Insurance Discount Determination Process using VBA to improve efficiency
- Refined & added enhancements to internal SAS data tools to improve code readability & reduce running time

NN Life Insurance Co. Ltd. — Sep. 2019- Apr. 2020
Actuarial Analyst
- Assisted in developing the company's MS Azure Database by building ETL pipelines in Azure Data Factory & writing T SQL queries in Azure Data Studio
- Optimized & automated 5+ Data Transformation processes using Qlikview to increase productivity
- Conducted User Acceptance Tests using Qlikview & Excel to ensure the correctness of SQL queries

Yahan Cui

Yahan has excellent logical analytical skills and is great at sourcing the reasons behind the data and proposing optimization solutions. She specializes in teamwork and can quickly establish good working relationships. Having equally developed time-management skills, she is able to work well independently and collaboratively in teams to achieve time-sensitive goals.

EDUCATION

Master of Financial Insurance
University of Toronto
2023 - 2024

BSc (Honours)
Actuarial Science & Statistics
Dalhousie University
2023

SKILLS

Technical: Python; R; AXIS; Microsoft 365

PROFESSIONAL CERTIFICATES/AWARDS

Society of Actuaries
P (Probability);
FM (Financial Mathematics);
SRM (Statistics for Risk Modelling

Dalhousie In-Course Scholarship:
2021; 2022
Ross Stewart Smith Scholarship:
2021

INTERESTS/ACTIVITIES

Sports; Hiking; Climbing;
Badminton

EXPERIENCE

Project: MFI Summer Project - UofT Jul. 2023
- As part of a team, designed insurance products for an insurance company
- Successfully calculated the premium, which makes the aggregate loss positive in a maximum of 10% of cases by simulating, predicted the monthly benefit reserves
- Planned a five-year investment by using mean-variance optimization such that the expected annual return is between 8% & 14% while also minimizing the volatility

Project: Machine Learning II Dec. 2022
Dalhousie University
- Wrote a classifier in Python to recognize handwritten digits in pictures
- Transformed the digits in the pictures into a matrix, used data from the training set, calculated the regression coefficient using gradient descent, & minimized the loss function
- Applied the resulting equations to the testing set & observed percentage of correct matches & the loss

Project: Machine Learning I Oct. 2022
Dalhousie University
- Using Python, wrote a program to divide the data into groups
- Repeated the K-means clustering until the centroid of each group did not change
- Calculated the sum of the squared distances of each data point in a group from each centroid & plot scatter plots to see how each group changes

Muge (Gloria) Deng

With a background in Actuarial Science and Statistics, Gloria is proficient in data analysis and has passed four SOA exams. She is also an effective team leader, detail-oriented, proactive, and a data-savvy explorer, developed through specialized coursework in actuarial science, risk management, and financial modelling.

EDUCATION

Master of Financial Insurance
University of Toronto
2023 - 2024

BSc (Honours)
Actuarial Science & Statistics
University of Toronto
2023

SKILLS

Technical: Python; R Studio; SQL; Excel;
AXIS; Microsoft 365

PROFESSIONAL CERTIFICATES/AWARDS

Society of Actuaries
P (Probability);
FM (Financial Mathematics);
IFM (Investment & Financial Markets);
SRM (Statistics for Risk Modelling)

INTERESTS/ACTIVITIES

Piano (ABRSM Grade 8);
Art (Painting; Rubber Sculpting)

EXPERIENCE

Project: AXIS Modeling for Whole Life Product, UofT Sep. 2023-Oct. 2023
- Developed a detailed AXIS cell for a whole life product, captured key metrics including gross premium, death benefit, & net cashflow
- Introduced advanced feature modifications to the base cell, enhanced the cell's responsiveness & precision
- Demonstrated adeptness in results reconciliation by verifying AXIS-reported values against self-computed results

Time Series Modelling with Applications in Economics & Public Health Sep. 2022-Nov. 2022
Researcher under the guidance of Professor Peter Kempthorne at MIT
- Gained a basic understanding of time series analysis, simple time series modes, & financial time series
- Familiarized with the stationary processes of testing estimated noise sequence for time series dependence
- Mastered Auto-regressive (AR), moving average (MA), & ARMA models selection & forecasting
- Completed a research paper by collecting & analyzing real-world time series data which was accepted by MEEA 2022

Guangzhou Hanhui Venture Capital Management Co., Ltd., China Jun. 2021-Aug. 2021
Intern, Investment Management Department
- Investigated specific industries, analyzed & summarized various data in the industry
- Conducted credit evaluation for companies, evaluated the company's business situation, tax information, & legal risks

Shuqi (Lexi) Deng

Shuqi is a target-driven professional actively pursuing a career in finance. She has strong analytical ability with practical experience in collecting, cleaning, and analyzing data. Shuqi has also demonstrated excellent communication, verbal and written, through collaborations with managers, clients, and team members.

EDUCATION

Master of Financial Insurance
University of Toronto
2023 - 2024

BSc (Honours) with High Distinction
Mathematical Applications in Economics & Finance Specialist
University of Toronto
2023

SKILLS

Technical: Python; SQL; R; AXIS; Advanced Excel; Microsoft 365

PROFESSIONAL CERTIFICATES/AWARDS

CFA Level 1: 2023

Dean's List Scholar: 2020; 2022; 2023

EXPERIENCE

Project: Canadian Government Bonds 5-Years Yield Prediction Feb. 2023

- Utilized Python to calculate the yield rate, spot rate, forward rate with the scipy package & functions
- Analyzed the yield curve, spot curve, forward curve for future bond yields trends generated from Python for insights
- Calculated & examined the corresponding covariance matrices, eigenvalues, eigenvectors & their implications

Project: UofT Price of Empire Research Project Jun. 2022- Aug. 2022
Research Assistant

- Conducted comparatice inspections of over 300 data entries between Canadian trade tables & Excel spreadsheets
- Collaborated with team members to complete multi- years of data compilations

Project: Airbnb Price Determinant Data Analysis Dec. 2021

- Completed an IMRAD report with Linear Regression model to discuss methods, results, & limitations
- Conducted literature reviews, exploratory data analysis, & five model building to determine the fittest model
- Utilized R for data visualization in the map to identify potential price determinants
- Collaborated with team to record a presentation of the results

University of Toronto May 2021- Aug. 2021
Research Assistant

- Collected 200+ entries of data from multiple sources
- Gathered 100+ CNKI academic journals & summarized
- Collaborated with team members to complete multiple-year data collection
- Coded in Excel to build a solid foundation for research topics

Lijie (Lily) Fan

Coming from a strong analytical background, Lily has a strong working knowledge of financial risk management, analytical and problem-solving skills from working in the finance, technology, and government sectors. She posseses excellent interpersonal skills to collaborate effectively with cross-funtional teams and clients.

EDUCATION

Master of Financial Insurance
University of Toronto
2023 - 2024

BMath (Honours)
Math/Financial Analysis & Risk Management - Professional Risk Management Specialization
(Co-op & Statistics)
University of Waterloo
2023

SKILLS

Technical: Python; MATLAB; R; SQL; AXIS; Excel VBA; Microsoft 365

PROFESSIONAL CERTIFICATES/AWARDS

Term Distinction: 2020 - 2021
Term Dean's Honours List: 2020
UW President's Scholarship of Distinction: 2018

INTERESTS/ACTIVITIES

Crafting Jewellery; Design & Carving; Board Games

EXPERIENCE

The Bank of China, Zhejiang, China Oct. 2022- Dec. 2022
Financial Risk Analyst

- Managed financial data, including data collection, validation, & reconciliation, using advanced Excel functions & macros
- Analyzed financial statements to identify risks & opportunities, utilizing data visualization tools Microsoft Power BI
- Participated in various ad hoc projects, such as M&A due diligence & regulatory compliance reviews

The Ontario Public Service, Toronto, ON Jan. 2022- Apr. 2022
Business Finance Analyst

- Created various checklists for financial analysis & expenditure control by using Excel
- Summarized the targets of funding database project & created onboarding training guidelines by using Visio
- Conducted financial modeling, scenario analysis, & sensitivity testing to support strategic planning & risk management

Long View Systems, Toronto, ON Sep. 2021- Dec. 2021
Business System Analyst

- Analyzed business needs requirements for Cloud, Security, End User, Business, & Digital Transformation solutions
- Updated corporate clients' technical needs with Microsoft Azure Sentinel for cloud expertise
- Created Technical Runbooks for clients using Microsoft Intune & integrated the application into Zscaler/ZPA

Maarouf Hatab

Maarouf is a meticulous and energetic individual with a keen sense of observation. He is a quick learner with hands-on experience in using machine learning models, data analysis in Python, Power BI and Excel. He is particularly interested in Blockchain and Fintech with also some experience in web development.

EDUCATION

Master of Financial Insurance
University of Toronto
2023 - 2024
MASTERCARD FOUNDATION SCHOLAR

BSc (First Class Honours)
Actuarial Science
Kwame Nkrumah University of Science & Technology (KNUST)
2019

SKILLS

Technical: Python; Excel; Power BI; AXIS; Microsoft 365

PROFESSIONAL CERTIFICATES/AWARDS

Society of Actuaries
P (Probability);
FM (Financial Mathematics)

INTERESTS/ACTIVITIES

KNUST Actuarial Club - Vice President
UofT Intramurals Volleyball
Ghana United Nations Student Association: Member

EXPERIENCE

Project: MFI Summer Project, UofT — Jun. 2023- Sep. 2023
Premium Pricing & Reserves Profit Analysis
- Developed a pricing strategy for a new whole life insurance product considering factors such as mortality rates, interest rates, & operational expenses
- Provided monthly predictions for the benefit reserves of the company over a five-year horizon, accounting for policy premiums, mortality benefits, & operational expenses

CEQA Foods & Beverages Limited, Accra, Ghana — Dec. 2022- Jan. 2023
Data Analyst - Intern
- Designed & developed dynamic visualization dashboards using Power BI to generate weekly reports
- Spearheaded the automation of file retrieval processes from servers, demonstrating strong technical proficiency in Python for seamless data extraction & manipulation significantly reducing manual workload

Kleros – Web3 Space — Nov. 2022
Blockchain Explorer - Freelance
- Used web scraping techniques to extract Ethereum contract addresses especially from GitHub
- Mapped contracts addresses to their respective domain or subdomain submitted in JSON format.

Government of Ghana, Central Region, Ghana — Sep. 2020- Aug. 2021
Human Resources Department Intern
- Played a pivotal role in coordinating & facilitating local government training workshop

Feiyang He

Feiyang has acquired strong analytical skills using machine learning models, time series models, and portfolio theory to solve financial problems. Feiyang also has exhibited excellent oral and written communication skills when working independently and collaboratively in teams.

EDUCATION

Master of Financial Insurance
University of Toronto
2023 - 2024

BSc Financial Mathematics & Statistics
University of California, Santa Barbara
2023

SKILLS

Technical: Python; R; SQL; AXIS; Microsoft 365

PROFESSIONAL CERTIFICATES/AWARDS

Dean's Honors 2020-2021

INTERESTS/ACTIVITIES

UCSB Soccer Team;
Guitar

EXPERIENCE

Project: MFI Insurance Summer Project, UofT — Jul. 2023- Sep. 2023
- Implemented cvxpy package in Python to find the minimum variance portfolio within the targeted range of return
- Performed value at risk analysis to justify the minimum variance portfolio in comparison to other portfolios within the targeted range of return
- Presented the optimal portfolio's characteristics & the value at risk analysis to program instructors

Project: Machine Learning Project — Jan. 2023- Apr. 2023
University of California, Santa Barbara
- Collected monthly data of 8 macroeconomic variables, such as GDP & CPI, to predict US government 10-year bond monthly yield
- Implemented Linear Regression, K-Nearest Neighbors, Random Forest, & Elastic Net Regression making prediction in R
- Applied exploratory data analysis, data splitting, stratified sampling, cross validation, & model tuning to improve model performance

Mingyi Fund, China (Remote) — Sep. 2022- Dec. 2022
Quantitative Researcher
- Collected monthly data of 14 macroeconomic variables to predict Chinese government 10-year bond monthly yield trend using Logistic Regression
- Implemented VAR model, ARIMA model, Random Walk, & Nelson-Siegel Model to predict Chinese government 10-year bond daily yield in R

Eugene Kwok

Eugene has strong leadership, research, and data management capabilities with a keen attention to detail. Also having strong quantitative, analytic, and problem solving skills, he is a great communicator, quick learner, and adaptable in a rapidly evolving environment.

EDUCATION

Master of Financial Insurance
University of Toronto
2023 - 2024

BA (Honours) High Distinction
International Economics
Minor in Mathematics
University of British Columbia
2023

SKILLS

Technical: Python; R Studio; LaTeX; STATA; Microsoft 365

PROFESSIONAL CERTIFICATES/AWARDS

Certificate of Appreciation for Student Leaders: 2023
Patricia M. Mohr Award [International Economics]: 2021
William M. Mercer Memorial Scholarship: 2021

Building a Financial Model
The Marquee Group: 2022

INTERESTS/ACTIVITIES

Badminton: BC Provincial U23 Men's Single Bronze Medalist: 2023

EXPERIENCE

2023 Summer Project, UofT — Jul. 2023-Aug. 2023
- Analyzed & evaluated difference between whole life insurance & 20-year endowment on premiums charged by insurer & company's reserve using Excel in a life insurance case study
- Simulated the movement of company's reserve under 20-year endowment using Python

University of British Columbia — Jan. 2023-Apr. 2023
Applied International Economics Research Project – International Finance
- Diagnosed the relationship of Environmental, Social & Governance (ESG) Score & stock returns in U.S. technology sector by carrying out data cleaning, merging & regression analysis on STATA

Research Assistant — Jan. 2022-Aug. 2022
- Assisted UBC professor to collect information on tweets about racial justice on discriminatory behavior by building & distributing survey to 38 groups & searching Ph.D. profiles per Ph.D. program from top 100 universities
- Quality checked 816 figures & verified 458 people from collected institutions to improve data accuracy

University of British Columbia, Centre for Accessibility — Sep. 2021-Apr. 2023
Notetaker/Mathematics Content Tutor
- Coached students with disabilities by uploading neat & self-written lecture notes on a secure website & organizing one-on-one mathematics content tutorials on a weekly basis

Aojie (Jay) Li

Aojie has strong interpersonal skills demonstrated through working independently and collaboratively in teams. With strong leadership and execution with experience in deep research of mathematical modelling and data analysis, Aojie is interested in working in pension plans, risk modelling, and financial analysis.

EDUCATION

Master of Financial Insurance
University of Toronto
2023 - 2024

BSc (Honours)
Mathematics & Statistics
[Specialization in Statistics]
Minor Economics
McMaster University
2023

SKILLS

Technical: Python; R Studio; MATLAB; AXIS; AWA Machine Learning; Microsoft 365

PROFESSIONAL CERTIFICATES/AWARDS

Python for Everybody; Python Data Structure - University of Michigan: 2022

Python & Statistics for Financial Analysts - Hong Kong University of Science & Technology: 2022

Course Certificate: "Financial Markets" [Yale University: 2022]

INTERESTS/ACTIVITIES

Basketball; Volleyball

EXPERIENCE

Project: 5-year horizon analysis for a new insurance product from AIC — Jun. 2023-Aug. 2023
University of Toronto
- Calculated expense augmented premiums
- Provided the predicted monthly benefit reserves for the company through recursive formula
- Created a profit analysis through simulation under new mortality assumption at portfolio level for the first five years
- Carried out a mean-variance optimization analysis & an efficient frontier plot through python

Project: Hungary Chickenpox Cases Time Series Analysis — Feb. 2022-Apr. 2022
McMaster University, Hamilton
- Compared to the datasets. Confirmed that Budapest's data is representative & selected it as the analysis subject
- Analyzed the ACF & PACF plot & hypothesized the model of either AR or ARMA
- Observed with ADF test, confirmed the model is ARIMA (2,3), & did the parameter estimation
- Draw Residual VS Time, QQ plot, and Residual ACF images to verify the correctness of the Box Test

CITIC Prudential Life Insurance, Nanjing, China — May 2021-Sep. 2021
Finance Intern
- Created spreadsheets using Microsoft Excel for periodic reporting
- Developed & analyzed budgets, performing financial statement analysis
- Tested budget system & conducted research & analysis on the cost control system

Wei Zhe (Nicholas) Lin

Nicholas is a highly proactive actuarial science graduate, holding six SOA exams, with relevant work experience in two of the largest insurance companies in Hong Kong. Having excellent interpersonal and communication skills in English, Cantonese and Mandarin, he has proven ability to work independently and collaboratively in a fast-paced environment.

EDUCATION

Master of Financial Insurance
University of Toronto
2023 - 2024

BSc (Honours)
Actuarial Science
Minor in Finance
University of Hong Kong
2022

Dean's Honour List 2020 - 2021

SKILLS

Technical: Python; VBA; SAS; SQL; AXIS; Microsoft 365

PROFESSIONAL CERTIFICATES/AWARDS

Society of Actuaries
P (Probability);
FM (Financial Mathematics);
SRM (Statistics for Risk Modelling);
STAM (Short-Term Actuarial Mathematics)
IFM (Investment & Financial Markets)
FAM-L (Fundamentals of Actuarial Mathematics - Long Term)

INTERESTS/ACTIVITIES

Basketball; Badminton; Hiking; Violin; Piano

EXPERIENCE

MFI Insurance Summer Project — Jul. 2023- Sep. 2023
University of Toronto
- Calculated premiums & reserves of whole life & endowment given mortality, interest, & expense assumptions
- Simulated the lifetime of policyholders to analyze the profitability of the insurance products
- Performed mean-variance analysis to find the optimal allocation of assets to meet specific investment return

AIA Company Limited, Hong Kong — Jul. 2021- Dec. 2021
Actuarial Intern, Group Actuarial Department
- Provided support in IFRS17 retrospective run
- Conducted preliminary checking on the SAS platform using SQL code to avoid possible program running failure due to duplicated or missing data
- Performed roll-forward of CSM balance for 10+ business units through UiPath to post monthly balances to an accounting platform
- Used test tools with independent calculation logic to check if the balances are consistent with the expectations, & automated the process by VBA to increase the efficiency

China Life Insurance (Overseas) Company Ltd., Hong Kong — Jul. 2019- Aug. 2019
Intern, Product Development Department
- Assisted in preparing an actuarial report by running profit & sensitivity testing to give a comprehensive analysis of a medical product before its launch
- Ran User Acceptance Test to ensure the premium shown on brokers' platforms matched our calculation
- Performed calculations on prepayment amount & surrender value to fulfill customers' requests

Cong (Crystal) Liu

With a solid quantitative background in Applied Statistics and Economics, Crystal's interest in risk and insurance modelling drives her commitment to deliver analytical insights that inform decision-making. She is enthusiastic about contributing her quantitative mindset and technical skills to reinforce risk modelling frameworks and boost strategic business growth.

EDUCATION

Master of Financial Insurance
University of Toronto
2023 - 2024

BSc (Honours)
Specialist in Statistical Science
Major Economics
University of Toronto
2023

SKILLS

Technical: R; Python; SAS; Tableau; Alteryx; AXIS; Microsoft 365

PROFESSIONAL CERTIFICATES/AWARDS

CIBC Exceptional Student Award: 2022; 2023
Innis College Scholarships: 2020-2022
Dean's List Scholar: 2020-2023

INTERESTS/ACTIVITIES

Piano; Musicals; Puzzles

EXPERIENCE

CIBC, Toronto — Jan. 2023- Aug. 2023 & Jan. 2022- Aug. 2022
Application Developer
- Delivered proper, timely & cost-effective solution for enterprise BI tools & services being used by 1000+ users
- Standardized & streamlined request collections with Power Automate, reducing turnaround time by 70%
- Collaborated with cross-functional teams to translate business requirements into actionable technical plans that fulfill business ask while adhering to enterprise security standards
- Facilitated efficient change management for enterprise BI infrastructure through collaborative technical discussions
- Gained a comprehensive understanding of end-to-end data flows through active participation in project activities

Project: Prediction Model for Stock Market Using Machine Learning Techniques — Nov. 2022- Dec. 2022
University of Toronto
- Extracted 2,000+ stock price data during 2019-2022 to evaluate the predictive performance of 3 machine learning models; identified logistic classifier as the optimal model given gathered dataset
- Developed a daily COVID search index using the average Google search popularity of the relevant keywords to incorporate the pandemic shock on U.S. stock market
- Achieved a predictive accuracy of 77.70% for stock direction using a logistic classifier built with Python

Keyi Luo

Keyi has demonstrated experience in Data Collection, Machine Learning Algorithm, Interpretation and Analysis, Stakeholder Management, Project Management, Quality Assurance and Database Management. She is interested in applying her skillset in the Data Science field, particularly exploring the research area of machine learning.

EDUCATION

Master of Financial Insurance
University of Toronto
2023 - 2024

BSc (Honours)
Statistics & Actuarial Science
Minor in Economics
University of Toronto
2019

University College Alumni Scholarship;
Bursary Fund Awards: 2018

SKILLS

Technical: Python; SQL; SAS; Javascript; AXIS; PowerBI; Microsoft 365

PROFESSIONAL CERTIFICATES/AWARDS

Society of Actuaries
P (Probability);
FM (Financial Mathematics)

CFA Level 1: 2019
SAS Global Certification:
Base Programming Specialist

INTERESTS/ACTIVITIES

Electric Guitar; Hip-Hop Dancing

EXPERIENCE

Loblaw Technology — Apr. 2020- Apr. 2023
Senior Reporting Analyst
- Analyzed reporting output providing process improvement recommendations
- Conducted ad-hoc analyses to deliver insights into potential optimization opportunities; assisted with urgent escalations
- Utilized machine learning algorithms to create predictive models for key performance indicators, guiding strategic decisions for senior leadership
- Automated manual reporting processes
- Managed ETL processes & database maintenance; used cron expressions & Quartz scheduling tools to automate reporting; oversaw data analysis initiatives to meet stakeholders' reporting requirements & led customer experience improvement projects

Bell Mobility — Nov. 2019- Dec. 2019
Analytic Assistant, Marketing Analytics
- Cleaned data & conducted QA processes on raw customer survey data using MS Excel
- Built survey dashboards utilizing MS Excel features

Sunlife Everbright China — Jun 2019- Aug. 2019
Actuarial Assistant
- Built & developed advanced Excel pricing models of specialized life insurance portfolio using VBA
- Conducted financial performance analysis using SQL & tracked key performance drivers leveraging portfolio database

Yuan (Cindy) Pei

Cindy is motivated, proactive, and detail-oriented with a passion for data automation, risk assessment and mitigation. Being a highly productive problem solver, she has strong analytical skills to simplify complex big data, polished research skills from performing regulatory reporting, preparing financial information packages, and conducting variance analysis.

EDUCATION

Master of Financial Insurance
University of Toronto
2023 - 2024

BMath (Honours) Distinction
Mathematics/Financial Analysis &
Risk Management
Professional Risk Management
Specialization
University of Waterloo
2021

SKILLS

Technical: Python; R; MATLAB; SAS; VBA; SQL; AXIS;

PROFESSIONAL CERTIFICATES/AWARDS

Certified Advanced Programmer for SAS 9

Top 3 bank-wide Best Co-op BMO:
Fall 2019

INTERESTS/ACTIVITIES

K-Pop/Jazz/Hip-Hop Dance

EXPERIENCE

Municipal Government Finance, Kunming, China — Sep. 2021- Jan. 2023
Financial Analyst
- Evaluated high-potential investment opportunities across seven critical green-finance industrial chains by utilizing risk matrices to quantify & prioritize risks
- Collaborated with key stakeholders within the Kunming Municipal Government to secure CNY 40 billion investment funding from 5 prominent banks

Bank of Montreal, Toronto — May 2020- Aug. 2020
Financial Analyst, Wealth Management
- Leveraged advanced VBA programming to develop customized scripts & macros tailored to the data structures & requirements of financial information packages
- Implemented data quality control measures with VBA automations to ensure the accuracy & integrity of financial data, resulting in a 50% reduction in data errors
- Proposed and pitched an innovative solution to BMO executives & over 230 interns in the final round to address mental wellbeing in the workplace & received the 1st place

Bank of Montreal, Toronto — Sep. 2019- Dec. 2019
Financial Business Analyst
- Developed & implemented VBA automation solutions to streamline the Banking Capital Adequacy Ratio reporting process, resulting in time savings of 1-2 hours person/day
- Designed & integrated risk assessment tools within the toolkit, enabling proactive identification & mitigation of potential risks associated with regulatory changes & process adjustments

Yu Peng

Yu Peng is a highly adaptable, and detailed oriented individual. She has developed exceptional written communication skills, through academic projects and work experience. With a strong background in quantitaive analysis, Yu is actively seeking opportunities to apply her skill set.

EDUCATION

Master of Financial Insurance
University of Toronto
2023 - 2024

BSc (Honours)
Statistics &
Applied and Mathematical Sciences
University of Toronto
2023

SKILLS

Technical: C/C++; Java; Python; MATLAB; R; SAS; MySQL; AXIS; Bloomberg; Wind; LaTeX; PyCharm; Eclipse; IntelliJ; Git; Tableau; Microsoft 365

PROFESSIONAL CERTIFICATES/AWARDS

2019 National Scholarship;
UofT Mississauga Honor Roll: 2019-20

INTERESTS/ACTIVITIES

Kaggle Challenege: 2022
Badminton; Jogging; Dancing; Fitness

EXPERIENCE

CSC Financial Co., Ltd., China — Aug. 2022-Nov. 2022
Data Analyst Intern

- Calculated price-weighted, equally weighted & value weighted share price indices of multiple companies in the open stock market & visualize the results in Excel and R
- Computed standard deviation & coefficient of variation for each company chosen in the portfolio, & the correlation coefficients between share return to determine which companies to be combined as a portfolio
- Constructed the Treynor-Black, Sharpe & Jensen model of data to test the performance of the portfolio
- Employed time series models in R to calculate the VaR of various investment portfolios over one year
- Assisted in the analysis & visualization of stock trading data at the firm's trading floor

PwC, Management & Consulting, China — Jul. 2021-Aug. 2021
Summer Intern

- Collected materials about personal information protection & performed preliminary analysis
- Contributed to the cooperation project with Everbright Bank & assisted in formulating consulting plan
- Assisted in conducting customer status research
- Compiled relevant documents

Taikang Insurance Group Inc., China — May 2021-Jul. 2021
Quantitative Analyst Intern

- Created two-dimensional survival function to account for the statistical correlation between the two spouses' survivals; estimated the unknown parameters using Bayesian approach, maximum likelihood estimation, & Markov chain Monte Carlo simulation

Raphael Tang

Raphael is an excellent communicator and experienced in macro-economic, financial time series and quantitative finance models. Having an undergraduate background in Economics and Mathematics, he is well-versed in financial econometrics, panel and cross section econometrics and seeking suitable positions to apply his quantitative aptitude.

EDUCATION

Master of Financial Insurance
University of Toronto
2023 - 2024

BA (Honours)
Economics
Wilfred Laurier, University of Waterloo
2022

SKILLS

Technical: Python; R; STATA; Bloomberg Terminal; AXIS

PROFESSIONAL CERTIFICATES/AWARDS

Peter Sinclair Award - [most technical thesis paper]: 2022
UofT Datathon: Top 5
Academic Merit Awards (WLU): 2019
Academic Entrance Scholarship (WLU): 2018

INTERESTS/ACTIVITIES

Participant in church charity events for relief missions;
Competitive Powerlifting;
Brazilian Jiu Jitsu

EXPERIENCE

Kenanga Investment Bank Berhad, Malaysia — Apr. 2023-Jun. 2023
Intern, Quantitative Research & Algorithmic Trading

- Assigned to 'discovery': Testing & researching models & strategies not yet used by the department
- Focused research on Autoregressive models & variations: Produced a report on the AR(1), AR(n) & SETAR model for the use of high frequency algorithmic trading

Maybank Berhad, Malaysia — Jun. 2021-Aug. 2021 & May 2020-Aug. 2020
Intern, Private Wealth Management

- Assigned to structured products, derivatives & equities
- Produced presentation on the 2020 US presidential election & effects on global financial markets. Distributed for training & education
- Used time series models to forecast department's model portfolio. Used VAR to assess portfolio risk, & GARCH for a short term out of sample risk forecast. The VAR showed a significant relationship between economic & portfolio risk, & the GARCH showed a relatively high volatility prediction

Maybank Berhad, Malaysia — May 2019-Aug. 2019 & May 2018-Aug. 2018
Intern/Private Wealth Management

- Assigned to Gaming, Oil & Gas, & Financial Institutions/ Banking
- Helped run rudimentary excel based financial forecasts for analyst reports
- Programmed simple back testing strategies based on technical analysis on the Bloomberg terminal
- Gathered data from Bloomberg terminal & local stock exchange for analyst reports

Zixuan (Olivia) Tong

Zixuan is accomplished in conducting research, analyzing data, and offering actionable insights. With a strong background in actuarial science, quantitative finance and financial analytics, she is knowledgeable in risk assessment and financial modelling. Zixuan has great interpersonal skills and fosters communciation and collaboration in diverse teams.

EDUCATION

Master of Financial Insurance
University of Toronto
2023 - 2024

BSc (Honours)
Actuarial & Financial Mathematics
Minor in Finance
McMaster University
2022

SKILLS

Technical: ; Python; R; SAS; Excel VBA; AXIS
Microsoft 365;

Python & Statistics for Financial Analysis
Hong Kong University 2022

PROFESSIONAL CERTIFICATES/AWARDS

Society of Actuaries
P (Probability);
FM (Financial Mathematics);
IFM (Investment & Financial Markets);
FAM (Fundamentals of Actuarial Mathematics)

Fundamentals of Quantitative Modelling
University of Pennsylvania 2022

INTERESTS/ACTIVITIES

Yoga; Travelling; Singing

EXPERIENCE

Royal Bank of Canada, Hamilton, ON — Aug. 2022- Sep. 2022
Financial Analyst

- Contributed extensively to professional discussions surrounding prospect of CBDC in Canada & China; researched cryptocurrencies & identified 2 specific technologies that RBC could implement for digital finance
- Analyzed business cases from a business analyst lens, applying research findings and quantitative analyses to provide solid recommendations through reports & presentations
- Assessed potential business & financial risks, & devised mitigation and contingency plans to prevent risks

Bank of China, Xi'an, China — Jul. 2021- Sep. 2021
Client Assistant

- Directed customers in completing various business documents while delivering assistance in activating credit & debit cards, transferring funds & other banking processes
- Expanding Mobile Banking Services & Innovating to Promote Digital RMB in China

McMaster & The Co-operators Problem Solving e-Workshop — Mar. 2022- Apr. 2022

- Entered final round of competition; used R to analyse the appropriate premium that automobile insurance company should acquire based on real insurance data
- Collaborated with group of 4 to explore topics including statistics, optimization, mathematical finance & programming

Fernanda Vazquez Hernandez

Fernanda is a high-performing and proactive actuary with experience in insurance pricing adapting to changing business needs. Through her solid actuarial background and extensive training in statistical modelling and quantitative analysis, she has developed a strong work ethic with excellent time management and communication skills.

EDUCATION

Master of Financial Insurance
University of Toronto
2023 - 2024

BSc (Honours)
Actuarial Science
Minor in Statistics
ITAM, Instituto Tecnológico Autónomo de México
2022

SKILLS

Technical: Python; R-Studio; MATLAB; LaTeX; SQL; AXIS; Microsoft 365
Language: Spanish; English

PROFESSIONAL CERTIFICATES/AWARDS

Society of Actuaries
P (Probability);
FM (Financial Mathematics);
ASTAM (Advanced Short-Term Actuarial Mathematics);
FAM - S (Fundamentals of Actuarial Mathematics - Short Term)

Academic Excellence Scholarship ITAM, Mexico City
Fashion MNIST Classification Challenge, University of St. Gallen, Switzerland

INTERESTS/ACTIVITIES

Running; Cycling; Road trips

EXPERIENCE

GNP, Grupo Nacional Provincial (Insurance Company of Baillères Group), Mexico City — Jan. 2020- Jul. 2023
Technical Specialist Pricing Automobile Agencies
Analyst Pricing Automobile Agencies
Intern/Co-op Pricing Automobile Agencies

- Performed risk premiums' calculations using regression & classification models incorporated in SAS & Python
- Built a price elasticity model to predict the expected market share in each agency & developed statistical improvements such as frequency trends analysis during & post pandemic
- Planned business proposals that led to new accounts acquisitions as a result of collaborative work with technical, supply, regulations, statistics & sales departments
- Managed the regulatory filing of automobile insurance products to improve market position & profitability

ITAM, Instituto Tecnológico Autónomo de México, Mexico City
Teaching Assistant — Aug. 2018- Dec. 2020

- Led weekly academic tutorials with practical exercises of Microeconomics II course for ITAM students
- Facilitated student engagement on online office hours during COVID-19 for achieving satisfactory grade

Board of Actuarial Science Member — Nov. 2018- Aug. 2019

- Structured informative & engaging workshops for BSc Actuarial Science students
- Organized engaging talks from company executives in the actuarial & financial field

Ting Wang

Through working at various large financial corporations, Ting has acquired advanced financial data analytical skills and proven ability to streamline the process of complex information compilation by creating models and tools in Python. An avid badminton player and ardent reader, reflects his commitment to both physical fitness and intellectual growth.

EDUCATION

Master of Financial Insurance
University of Toronto
2023 - 2024

BSc (Honours)
Actuarial Science & Economics
University of Toronto
2021

SKILLS

Technical: Microsoft 365; R; Python; SQL; SAS; Tableau; Bloomberg; AXIS

PROFESSIONAL CERTIFICATES/AWARDS

Society of Actuaries
P (Probability);
FM (Financial Mathematics);
IFM (Investment & Financial Markets);

INTERESTS/ACTIVITIES

Badminton Player;
Reading

EXPERIENCE

Deloitte, Toronto, ON — Jan. 2023-Jun. 2023
Analyst, Audit & Insurance
- Performed audits to obtain reasonable assurance on whether the financial statements are free of material misstatement, whether caused by error or fraud
- Provided support to the audit team
- Assisted senior consultants on model validation & output check for client's IFRS17 implementation

Moody's Analystics, Toronto, ON — May 2022-Dec. 2022
Intern, Risk, Technology & Operation
- Assisted testers as part of pre-release testing of new AXIS
- Provided feedback on client requirements from a technical perspective & provide time estimates for the process
- Analyzed the results of tests that have been performed reporting to the programming team

Travelers Insurance, Toronto, ON — Jan. 2022-Apr. 2022
Intern, Pricing
- Independently updated auto insurance loss trend & premium trend by running SAS program, & reconciling AY loss triangles in Alpha
- Developed Property Indices research on Statistical Canada and Moody's economic reports
- Analyzed property & auto rate level indications

Pacific Life Re, London, UK (Remote) — May 2021-Dec. 2021
Intern, Europe Research & Development
- Analyzed experience claim data & reconciled results
- Supported actuarial research projects
- Streamlined data visualization process

Jingyu (Suki) Xu

Jingyu has developed statistical analysis, risk modeling, leadership, and teamwork skills, cultivated through past work and project experience. As a pro-active learner, Suki can multi-task on various projects to a high standard and is passionate about data and quantitative analysis. She also possesses proven ability in customer service, time-management, teamwork, and problem-solving.

EDUCATION

Master of Financial Insurance
University of Toronto
2023 - 2024

BSc (Honours)
Statistics
Minor in Economics
Queens's University
2019

SKILLS

Technical: Python; R; SAS; LaTeX; Jape; KNIME; AXIS; Microsoft 365

PROFESSIONAL CERTIFICATES/AWARDS

Dean's List: 2019-2022
Queen's University Excellence Scholarship: 2018-2019

INTERESTS/ACTIVITIES

Cooking; Radio Broadcasting; Board Games

EXPERIENCE

Project: MFI Summer Project — May 2023-Aug. 2023
- Developed a pricing strategy & portfolio investment strategy for new whole life insurance product
- Calculated expense-augmented premiums for smokers & non-smokers using normal approximation methods
- Using Python, provided monthly predictions of the company's benefit reserves for the first 5 years
- Re-analyzed all values but in 20-year term & 20-year endowment, comparing the differences between predicted reserves & true reserves
- Applied mean-variance optimization analysis & included an efficient frontier plot of the expected investment portfolio returns against risk

Sharetea, Kingston, ON — May 2020-Aug. 2023
Assistant Manager
- Effective employee performance management to provide quality customer service
- Resolution of critical issues in a time-sensitive environment using analytical skills to achieve store objectives
- Managed product inventory by gathering & submitting budget information, & scheduling expenses

Queen's University — Sep. 2020-Apr. 2021
Academic Advisor - Volunteer
- Joined Peer Academic Support Service (PASS) to support 400 students promoting academic success
- Held 1:1 Zoom meetings, responded to emails & live Chat during the pandemic

Han (Althea) Yang

Althea has an outstanding academic background with strong technical proficiencies in data modelling and risk analytics. She is highly motivated, enthusiastic, and possesses exceptional interpersonal skills cultivated from work and volunteer experience. Additionally, Althea has developed great time management with a proven ability to work under pressure to meet timelines.

EDUCATION

Master of Financial Insurance
University of Toronto
2023 - 2024

BSc (Honours) with Distinction
Actuarial Science
Minor in Mathematics
Simon Fraser University
2023

SKILLS

Technical: R; Python; MATLAB; VBA; LaTeX; AXIS; Microsoft 365

PROFESSIONAL CERTIFICATES/AWARDS

Society of Actuaries
P (Probability);
FM (Financial Mathematics);
VEE: Economics
VEE: Accounting & Finance
VEE: Mathematical Statistics

President's & Dean's Honour Roll: 2021; 2022
Open Scholarship: 2022

INTERESTS/ACTIVITIES

Hiking; Boating; Travelling; Piano (G10)

EXPERIENCE

Simon Fraser University, B.C. — May 2022- Aug. 2022
Researcher
- Participated in the Undergraduate Student Research Awards (USRA) program & granted a VPR USRA Science Award
- Studied the patterns in human mortality tables from different countries from data gathering, data cleaning, to modelling
- Invented ways of predictive analysis in mortality rates by modifying life tables
- Fine-tuned 30 different machine learning models & compared prediction results

Guolian Securities, Wuxi, Jiangsu, China — May 2021- Jul. 2021
Actuarial Intern
- Designed & reviewed contracts for multiple insurance products
- Studied & proposed DRG & DIP health insurance reform
- Gathered data & refined historical insurance pricing models & developed statistical product models using VBA & R
- Collaborated with Strategic Planning & Legal

Project: Life Insurance Analysis [individual] — Aug. 2023
Simon Fraser University
- Calculated premiums for insureds based on company's requirements of loss reserves
- Used Python to simulate survival rates of insureds with different mortality rates
- Estimated benefit reserves & profits at month-end using Excel & VBA
- Suggested investments by plotting efficient frontier of four securities

Ziyang Ye

Ziyang is an engineering degree holder with excellent analytical skills and extensive quantitative research experience in the financial industry. Having adopted multiple leadership roles in various engineering projects and composed many robust analytic reports, he has developed strong leadership abilities and fostered a reputation as a key contributor through problem-solving and innovation skills.

EDUCATION

Master of Financial Insurance
University of Toronto
2023 - 2024

BASc (Honours)
Industrial Engineering
Minor in Engineering Business
University of Toronto
2023

SKILLS

Technical: Python; R; MATLAB; Java; Javascript; SQL; AutoCAD; AMPL; SAS; SAS Viya; PowerBI; VBA; Microsoft 365

INTERESTS/ACTIVITIES

Basketball; Photography; Movies

EXPERIENCE

Royal Bank of Canada, Toronto, ON — Sep. 2022- Apr. 2023
Junior Consultant
- Led customer insight projects through the use of sentiment analysis using the NLTK & Whoosh packages in Python
- Performed exploratory data analysis, data cleaning, & feature engineering of large-scale business datasets
- Designed a knowledge graph to represent the relationship between 20 entities through the use of Graph DB

Skybound Capital, Hong Kong — May 2022- Aug. 2022
Summer Associate, Risk & Model Development
- Conducted risk evaluation & ran simulation to examine expected growth on different portfolio allocations
- Developed autoregressive models to analyze various types of financial data & forecast the liquidity overage
- Built a dynamic conditional correlation model to assess the risk for the fund
- Proposed & optimized the automation programs for the trading cost analysis in Python

BMO Financial Group, Toronto, ON — May 2021- Apr. 2022
Data Engineer, Strategic Business Analytics, ML & AI
- Developed an automated visualization system in Python
- Developed a SAS algorithm that provided time series adjustments, systematic cycling effects eliminations, & statistical process controls on the completion rate
- Supported & validated model development process of Mortgage Retention Rate Prediction by leveraging machine learning algorithms & statistical methodologies
- Designed an ETL data pipeline to organize databases for risk analytic purposes & automated 5 dashboards

Pengcheng (PC) Zhang

With a solid academic background, Pengcheng is a dynamic financial analyst with an unwavering passion for unearthing insights in data. Fueled by curiosity and commitment, he enjoys diving deep into complex challenges, delivering data-driven solutions and bringing value to the table. He is particularly intrested in Data Analytics, Risk Management and Portfolio Optimization.

EDUCATION

Master of Financial Insurance
University of Toronto
2023 - 2024

BSc (Honours)
Mathematics & Statistics
University of Toronto
2023

EXPERIENCE

Application and Practice of Data Science — Fall 2022
Mentored by Shlomo Ta'Asan

- Applied machine learning algorithms, principal component analysis, & regularization to build a movie recommendation system
- Used graphical tools to obtain insight into hidden structures such as clusters, probabilities on economic issues
- Approached large datasets from different viewpoints, including graphical interpretation, probabilistic & statistical approaches, & modern machine learning tools

Fintelics (Remote) — Jun. 2022-Aug. 2022
Data Analyst Intern

- Created graphs visualizing all transaction data on rocketvideo.io by interlinking all relevant datasheets via PostgreSQL
- Cleaned & processed raw data of users information, transactions, & finance income targeting user portrait
- Used Python for data gathering, data cleaning, data analysis, & data visualization

Huawei Xi 'an Research Institute, Xi'an, China — May 2021-Aug. 2021
Data Analytics Intern, Core Cloud Department

- Assisted with the Sales Data Screen Project
- Used SQL to import & clean raw data scraped from data warehouse supporting further calculations & analysis
- Created dataset with SQL, established dynamic-link tables, calculated data, & created statistical plots
- Using R, built the linear regression model

SKILLS

Technical: Python; R; SQL; AXIS; Microsoft 365

PROFESSIONAL CERTIFICATES/AWARDS

Dean's List Scholar: 2020; 2022

INTERESTS/ACTIVITIES

Football; Movies

Jiaheng (Steven) Zhou

Steven demonstrates a strong foundation in financial mathematics and data science through the completion of the CFA Level I. He is a self-motivated learner with hands-on experience in wealth management and fixed income securities. He is enthusiastic about applying his statistical analysis skills to quantitative finance and risk management.

EDUCATION

Master of Financial Insurance
University of Toronto
2023 - 2024

BMath (Honours) with Distinction
Statistics
University of Waterloo
2022

EXPERIENCE

TD Bank, Toronto — Aug. 2022-Mar. 2023
Wealth Operations Officer

- Reconciled RESP accounts & processed internal account transfer requests in Excel via VBA Macros promptly & efficiently. Led a project to clear more than 1800 backlog requests in three months
- Investigated RESP account transfer errors by gathering & analyzing information from multiple sources & platforms, including ISM, CGI CORE, & EIS View
- Coordinated with other teams to validate internal account transfer requests submitted by TD Wealth Management clients by adhering to established Service Level Agreements
- Improved & documented the EUCs (end-user computing) by modifying the existing macros in Excel VBA to make the workflow more intuitive & less error prone. Identified gaps in current procedures to reduce operational risk

China Guangfa Bank (CCB), Wuhan — May 2021-Jul. 2021
Financial Analyst Intern

- Assisted in the underwriting & issuance of the ¥800 million medium-term note for Hubei Yangtze Investment Group & the ¥500 million short-term commercial paper for Huangshi State-owned Assets Management CO., LTD by preparing the issuing documents & performing due diligence analysis while adhering to look-through principle.
- Analyzed credit risk of 15 state-owned entities that intended to issue fixed-income securities
- Documented critical client company parameters

SKILLS

Technical: Python; R; SQL; Excel VBA Macros; Power BI; AXIS; Microsoft 365

PROFESSIONAL CERTIFICATES/AWARDS

CFA Level 1
Bloomberg Certificate
2019 President's Scholarship of Distinction

INTERESTS/ACTIVITIES

SOA Student Research Case Study Challenge: 2022

2022 ASA Datafest

Meet Our Alumni

"The MFI taught me to be confident and strong in networking and communication, deep and diversified knowledge, and to keep pace with the new development frontier of the financial market and relevant technologies."
Meng (Moriah) Yu, MFI '18

I graduated from the MFI program with technical skills, business acumen, confidence and friendship, among all the spectacular experience I did not expect. Joining the MFI is a decision I will always be proud of!
Yuling (Tim) Wang, MFI '21

"My time at U of T was nothing but an unforgettable experience. I am highly thankful for the depth of knowledge the MFI program has armed me with. It is a privilege to be part of such a great program."
Adrien Brice Nouya, MFI '17

"The MFI program has been incredibly useful for me because it helped me to further improve my theoretical knowledge while giving me an opportunity to apply the information I learnt to meaningful projects that mimic the real world."
Saeed Mohammed, MFI '20

"One thing about being in a small-sized program is that we can build this close bond with each other. We are not only classmates, but also friends who can support each other in the industry... Although it was only a one-year program, it became a journey to discover my capabilities, my area of interests, and my future career. The MFI program showed me how to be a leader and an influencer. It's been an absolutely fantastic ride, and I will never forget the MFI family."
Harper Lin, MFI '22

"The MFI program had constantly challenged us in its unique way, both intellectually and socially, with a plethora of projects, presentations, seminars, networking events. So many of my firsts happened here – first job interview, first networking event, first four-hour long final. I am ever so grateful for everything the MFI program has gifted me and the admin team has certainly done an excellent job!"
Tianrun Pang, MFI '20

"When I first joined the MFI Program, I thought it would be a top master's program on finance and insurance. Today, after graduating, I know it is way more than that. Beyond the world-class faculty and courses, we have exposure to great industry professionals, real world case studies, and all the necessary support to boost our careers. I could not be happier with my choice."
Alan Fontoura, MFI '22

"The MFI experience was truly a challenging and rewarding experience. The mix of theoretical finance with numerous opportunities to practice implementation truly prepared me for the professional world."
Boris Migan, MFI '23

"It is an honour for me to be part of the MFI program. The teaching team supported and guided me with their valuable insights and industry experience. They constructed the perfect studying environment to suit my background and interest in actuarial science, data science, and financial mathematics.
MFI also provided me opportunities to connect with industry professionals, and to further improve myself beyond academics."
Colin Chen, MFI '20

"I found the Master of Financial Insurance to be a perfect blend of pricing theory, risk management and data science. Being part of the 3rd cohort of the program, I had the opportunity to be exposed to several experts in the field and established professionals of both industries. Would also particularly praise the structure of the program itself; by having the internship as the last component of the academic year, the program sets us, the students, up for success by allowing us to stay on - when the opportunity arises - with the companies where we trained as interns."
Paola Tolentino, MFI '19

2023 MFI Graduate Award Recipients

MFI Academic Award

Awarded to the MFI student with the highest overall academic performance and participation throughout the year

Senhao (Jimmy) Chen a University of Waterloo graduate before joining the MFI Program, completed his work term at Purpose Investments as a Quantitative Analyst. He has not only excelled academically in all core MFI courses but has also been a role model to his classmates through coaching and leadership promoting a positive learning environment. Congratulations Jimmy!

"My experience in the 2022 Master of Financial Insurance (MFI) program was truly exceptional. This program not only equipped me with a robust understanding of finance and insurance but also immersed me in advanced disciplines such as machine learning and time series analysis. Through challenging real-world case studies, I developed practical problem-solving skills that are vital in today's financial landscape. What truly sets the MFI program apart is its unwavering commitment to fostering industry connections. We had the privilege of participating in seminars with seasoned professionals and benefited from guest lecturers who expertly bridged the gap between theoretical knowledge and real-world application.

I would like to express my profound gratitude to the dedicated professors and staff who have played a pivotal role in making this program outstanding. Receiving the prestigious MFI Academic Achievement Award, which is awarded to the top-performing student in coursework throughout the year, is a tremendous honor. It not only reflects the program's academic rigor but also motivates me to strive for excellence in my future endeavors. In summary, my journey through the MFI program at the University of Toronto has been nothing short of transformative."

SENHAO (JIMMY) CHEN, MFI Academic Achievement Award Recipient

MFI Business Acumen Award

Awarded to the MFI student with the best overall performance in their work placement, presentations and discussion throughout the year

BORIS MIGAN graduated from the University of Prince Edward Island in Actuarial Science, with a minor in Business & Statistics. Boris secured a highly sought after place on the BMO Graduate Rotational Program soon after joining the program. Throughout his time as a MFI student, Boris has been an enthusiatic and active participant in guest lectures and industry sessions. Congratulations on your well-deserved award Boris!

"Joining the MFI program was a game-changer in my professional journey. At the beginning, I was uncertain about my career trajectory. However, I held a fervent desire to enhance my expertise and absorb as much knowledge as possible. Over an intense year at MFI, I delved deeply into data science, finance, and insurance. These are crucial subject that have equipped me with the skills necessary to stand out in today's competitive job market. The program's exceptional faculty, overflowing with passion and expertise, further piqued my curiosity in these subjects.

To me, MFI was more than just an academic pursuit; it was a hub of inspiration, robust learning, and invaluable networking. I am profoundly grateful for the connections I've made, the insights I've garnered, and the transformative experiences I've had."

BORIS MIGAN, MFI Business Acumen Award Recipient

MFI Ambassador Award (Joint Recipient)

MFI Ambassador Award (Joint Recipient)

Awarded to the MFI student who best embodies the values and qualities of the MFI Program, and whose fellow students see as the best representative of the MFI

JOHN NDOLO (joint recipient) came to the MFI Program after graduating from Jomo Kenyatta University of Agriculture & Technology (JKUAT) and from a Masters Program from the African Institute for Mathematical Sciences (AIMS). John is also a MasterCard Foundation Scholar, and is currently working at Roche in their Nigeria location. John is loyal and active representative of the MFI Program, and a valuable advocate and spokesperson for inclusivity. Congratulations John!

"As an Alumni of the MFI program at University of Toronto, I can confidently attest to the incredible depth and robustness of the MFI program, particularly in the fields of actuarial science, mathematical finance, and data science. This comprehensive curriculum not only equipped me with a strong theoretical foundation but also practical skills that have been invaluable in my transition to the industry.

My experience as a Market Data and Insights lead at Roche Africa was greatly enhanced by the diverse knowledge I gained through MFI. Furthermore, the program's emphasis on teamwork and the support of my exceptional classmates made the challenging journey all the more rewarding. MFI truly stands out as a transformative experience that empowers students to thrive in a multitude of industries."

JOHN NDOLO, MFI Ambassador Award Recipient

ZHI YE (MICHAEL) LUAN (joint recipient) was a University of Toronto graduate before joining the MFI Program. He has been an extremely engaging, popular and proactive member of the 2023 cohort. He is sensitive to the sentiment of his classmates with great team spirit, frequently advocating on their behalf. Congratulations Michael on your well deserved award!

"The MFI program was an immensely rewarding and challenging. The academic rigour in tandem with hands-on professional guidance with unparalleled tutelage from world-class professors and industry professionals provided an experience that prepared me for the future.

The program's commitment to cultivating integrity, excellence, and innovative thinking among its students is why being recognized with the Ambassador Award is such an honor."

ZHI YE (MICHAEL) LUAN, MFI Ambassador Award Recipient

"The MFI program attracts students with training in mathematics, statistics, actuarial science, computer science and operations research. This broad base of skills allows the students to quickly learn some subtle concepts in mathematical finance.

Our MFI hire, Mike Liang, works on the institutional structuring desk at CIBC Capital Markets, and is developing a system and method of visualizing pricing deviations over time. The hiring process was very quick and seamless."

Tushar Arora, CIBC

"Our MFI Intern (Yixin) showed great skill in producing daily investment analytical reports & analyses with high accuracy and attention to details.

She also had a positive and collaborative attitude, always willing to support her team members and cope with urgent situations. Yixin is a promising professional in the field of investment management, and we are very happy to her joined our team."

Timothy Li, HOOPP

"Jimmy's shown a keen understanding of quantitative methods, and he's been able to apply this knowledge effectively in our fast-paced environment. Clearly, the MFI program has given him the tools to excel from the get-go, and he's been a great addition to our team."

Jason Chen, Purpose Investments

Program Contact Information

If you are interested in collaborating with the Masters of Financial Insurance program, or wish to receive the full resume of any of the students in the profile section, the MFI Team would be delighted to hear from you!

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Stay in touch!

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