ZHENDONG ZHANG

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Education

Bachelor of Science: Specialist in Actuarial Science, **Double Major** in Economics & Statistics, Expected in 04/2023
University of Toronto – Toronto, Canada   **Upper Year GPA** 3.8/4.0
Notable Coursework
Advanced Life Contingencies [100%], Loss Models [91%], Financial Principles II [90%], Applied Game Theory [95%] Mathematics of Investment & Credit [81%], Corporate Finance for Actuarial Science [86%], Statistical Methods for Machine Learning II [87%]

Professional Designations & Certifications

Exam MAS-I: Modern Actuarial Statistics-I [Passed: 2022] | Casualty Actuarial Society
Exam SRM: Statistics for Risk Modeling [Passed: 2021] | *Canadian Institute of Actuaries*
Exam IFM/3F: Investment & Financial Markets [Passed: 2021] | *Canadian Institute of Actuaries*
Exam FM/2: Financial Mathematics [Passed: 2019] | *Canadian Institute of Actuaries*
SAS Advanced Programmer Professional Certificate | *SAS | 2021*
Bloomberg Market Concepts Certificate | *Bloomberg Professional Services | 2021*
Financial Engineering & Risk Management Part 1 Certificate | *Columbia University | 2021*
KPMG Data Analytics Consulting Virtual Internship Certificate | *Forage | 2021*
Location-Enabling Data Certificate | *Esri Academy | 2021*

Professional Experience

Actuarial Analyst | Risk Sharing Pool, Full-time Co-op, 09/2022 to 01/2023
Definity – Toronto, Canada
- Optimized, organized, and maintained R data pipelines to incorporate new features based on requirements from other teams
- Automated pipelines used to need manual work to free people from repetitive works, using R
- Enhanced data download programs and utilized VBA to optimize Pricing Relativity Application
- Managed weekly ceding work for Canada-wide FA and GAA regions, including monitoring performance and eligibility checks
- Conducted benefit quantification to ensure expected benefits for risks sent to the risk-sharing pool

Actuarial Analyst | Rating Revolution, Full-time Co-op, 01/2022 to 09/2022
Intact – Toronto, Canada
- Performing analysis to the result of machine learning pricing model, providing insights to personal line team for decision making
- Implemented extrapolations on XGBoost Model, improving predictability on various clients; overcame the limitation of the model and the problems brought by data inefficiency
- Preparing filing procedures for regulators, helped to revise proposed premium and several manual adjustments
- Performing dislocation analysis to evaluate model performance, comparing candidate models by lift curves

Project Experience

Case Competition: ASNA 2022 – Finalist Top 3
- Provided an actuarial approach to predicting the uncertainty brought by pandemic; be chosen as a top 3 team

Auto Policy Liability Estimation [Exam 5 Content]
- Estimated ultimate loss and IBNR from all auto policy data provided by General Insurance Statistical Agency
- Skillfully implemented Bornhuetter-Ferguson, expect, frequency-severity and loss development method to make projections

Data Analysis Project, Movie Rental Retail [SQL & R]
- Designed and developed inventory reports to track and monitor product availability at individual store level while also implementing compiled data to contribute towards replenishment strategies and drive economic growth
- Skillfully leveraged technical proficiency in SQL programming language to query relevant data from database, generating monthly reports to monitor sales performance of 1000 products within singular locations

Data Modeling Project, Prediction on US 2020 Election [R]
- Developed MRP model weighted by 2017 American Community Survey to generate predictions regarding 2020 American presidency election, successfully delivering predictions paralleling final election results
- Performed extensive cross-comparison analysis on survey and post-stratification data estimations using Bayesian Interface
- Constructed detailed written report outlining findings, meticulously validating all compiled data prior to consolidation

Data Tracking Project, Building Database [Python]
- Developed and implemented tree-structured database, using advanced recursion skills to design leaf-modeled components to contain massive amounts of data
- Skillfully developed efficient tracking system, ensuring minimal use of resources and securing shortest processing time
- Performed classifications on massive datasets, categorizing data into multiple classes and implementing weight onto every single leaf's importance level to cut extraction processing times

Machine Learning Project, Gradient Descent Algorithm [Julia]
- Designed variation auto-encoder model using Julia's Flux package on MNIST images of handwritten digits
- Diligently trained model to perform accurate autofill functions on image's missing components within multiple different fields and environments
- Successfully constructed model to recognize handwritten digits within distribution and deliver correct estimations for images

Skills

Programming Language Proficiencies: Python, Julia, R & SQL
Technical Skills: MS Office Suite including VBA, Stata, MySQL, ArcGIS, Tableau, Power BI & Bloomberg Terminal, SAS

Languages: Mandarin (Native) & English (Fluent)
Professional Skills: Project Management, Risk Evaluation & Statistical Modelling