TSING OUYANG

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EDUCATION

University of Washington, Seattle, WA — Expected December 2026
Master of Science in Computational Finance and Risk Management, GPA: 3.83/4.0

University of Waterloo, Waterloo, ON — April 2025
Bachelor of Mathematics (Hons.) in Financial Analysis and Risk Management; Statistics, GPA: 3.71/4.0

TECHNICAL SKILLS

- *Programming:* Python (NumPy, Pandas, SciPy, PyTorch), R (Tidyverse, Quantmod), Excel/VBA, SQL, C, MATLAB
- *Quantitative:* Stochastic Calculus, VaR/ES, Martingale Pricing, Time Series Analysis (GARCH/ARIMA)
- *Tools:* Bloomberg Terminal, Power BI, Git, Power Query, JIRA, SAP, NetSuite, Appian
- *Certifications:* FRM Part I, Baruch Pre-MFE Distinction

WORK EXPERIENCE

Athene, Toronto, ON
Actuarial Analyst Co-op, Actuarial Assumption — Jan 2025 – Apr 2025
- Executed backtesting with SciPy to compare actuals against actuarial assumptions (mortality, lapse, and credit default rates); optimized pricing models by validating reserves and claim payouts, achieving a 50% reduction in variance
- Implemented OLS/GLMs Regression models to forecast claim frequency and severity trends; performed sensitivity analysis to identify key risk drivers, leading to a 5% refinement in liability reserve

Actuarial Analyst Co-op, EBS Reporting — Sept 2024 – Dec 2024
- Facilitated a $13 million capital allocation review by synthesizing quantitative insights from EBS and US Statutory reconciliations
- Engineered a stochastic projection model using Pandas and NumPy to value Bermuda EBS liabilities; utilized risk-neutral valuation to quantify Best Estimate Liability (BEL) across 1,000+ market scenarios
- Architected an automated tool with Python to calculate daily derivative collateral requirements and counterparty credit risk; replaced manual entry with a script that improved calculation speed by 40%

Aon, *Pension Associate Intern*, Toronto, ON — Sept 2023 – Dec 2023
- Calculated retirement benefits and survivor entitlements using actuarial life-contingency models, processing $1 million disbursements across 200 members
- Developed COLA (Cost-of-Living Adjustments) and PA/PAR (Pension Adjustment Reversal) calculations for 1,000+ active accounts to ensure inflation protection and tax-compliant room recalibration, maintaining 100% data integrity
- Performed liability settlements for terminating participants; automated VBA Macro tools in Excel to reconcile member data, mitigating model risks and reducing manual processing errors by 20%

Liberty Utilities, *FP&A Analyst Co-op*, Oakville, ON — Jan 2023 – Apr 2023
- Streamlined a 20GB database using SQL scripts; architected an ETL Pipeline to transform raw transactional records into structured inputs for enterprise-level forecasting models
- Conducted Linear Regression and variance analysis on utility datasets in SQL, refined cost drivers to improve budget projection accuracy and increase model R^2

PROJECTS

Asset Allocation & Portfolio Management, *Course Project*, Optimization in Finance — Sept 2025 – Dec 2025
- Constructed a 10-year dynamic portfolio strategy to grow a $40 million foundation to a $100 million target; integrated earning and spending cash flows into a multi-stage wealth accumulation framework
- Formulated a stochastic, non-linear optimization problem mathematically, using Dynamic Programming, Recursive Algorithm and *optim()* solver to maximize expected Mean-Variance utility function
- Used Multi-variate Normal log-returns and Cholesky decomposition in R (MASS) to model theoretical markets; deployed Monte Carlo simulations to quantify the probability and required return for success