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Yichen Wang

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Education:

National University of Singapore *2017-2018*

Master of Science in Quantitative Finance

- Related Topics:
  Stochastic Analysis in Mathematical Finance; Risk Management; Financial Econometrics; Financial Time Series; Structured Products
- Projects:
  - *Local Volatility Analysis of European Options*
    Apply the arbitrage free smile interpolator to construct local volatility model and use MCMC simulation to price a given set of European options then compare, mostly done with C++.
  - *Olympics Risk Management*
    Identify market risks, credit risks, operational risks, liquidity and model risks that accompany with Olympics and suggest possible solutions on hedging risks.
  - *Convertible Bonds and Mortgage Backed Securities Study*
    Simulate the process of convertible bonds and mortgage backed securities, find the price and optimal conversion time, mostly done with MATLAB.

University of Toronto *2012-2016*

Honors Bachelor of Science in Actuarial Science Specialist and Statistics Major

- Related Topics:
  - Actuarial Science: Stochastic Calculus; Interest Rate Models; Black-Scholes model; Loss and Survival Models
  - Statistics: Simulation (Monte Carlo Methods); Information Theory; Multivariate Analysis; Random Effects Models; Designed Experiments; Model Selection; Analysis of Censored Data and Bayesian Inference
- Projects:
  - *Temperature Prediction Model*
    Apply time series analysis skills to forecast 4 months of temperature given one-year data on R.
  - *Black-Scholes Simulation*
    Simulate the financial products given stochastic differential equation and calculate their prices with VBA.

Scholarships and Awards:

- University of Toronto Scholarship *2012*
- University of Toronto Scholarship for Faculty of Arts and Science *2012*
- 2011 & 2012 Euclid Mathematics Contest (Top 10% in Canada) *2011&2012*

Exam Designations:

- Society of Actuary

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- Exam P - Probability *July 2014*
- Exam FM - Financial Mathematics *August 2014*
- Exam MFE - Models for Financial Economics *March 2016*

Programming Skills:

- **R**: Primary tool for academic and industrial data analysis and statistical model development.
  - **RStan**: Construct Hierarchical Bayesian model and study inferences from MCMC results.
- **Python**: Accomplish basic data process, develop tools for automation (import prices and generate XML).
- **SQL**: Comfortable with advanced SQL techniques including writing stored procedures, pivoting and cursor loops, etc.
- **MATLAB**: Generate random processes, simulate structured financial products and pricing.
- **Miscellaneous: VBA (Intermediate); Power BI (Intermediate); C++ (Elementary); Virtual Machine Set up (Elementary)**

Related Experiences:

- Pricing Analyst at Revenue Management Solutions (Singapore) *Aug. 21st, 2018 - Present*
  - *Conjoint Study Data Integration into the Pricing Model*
    Convert the results of market survey on customers' choices at various price levels to prior distribution of our Hierarchical Bayesian model on store-level item sensitivity as part of our pricing process.
  - *Sales Forecast*
    Maintain and develop sales forecasting model. Study residuals behavior and help with the budget of short-term marketing activity when the performance is impacted by unexpected variation i.e. promotion, extreme weather and change of business momentum.
  - *Business Analysis*
    Dig into data and find insights behind regarding pricing related business questions. Estimate guest count sensitivity of every store and suggest threshold of price increase for pricing rounds, compare price increase with overall or food & beverages CPI, and estimate the impact of significant business changes.
  - *Licensee Assistance along the Pricing Process*
    Study licensees' store performance and look for opportunities to improve gross profit margin by providing more efficient pricing recommendation. Understand their needs by communicating with them in person.
  - *Automation Work*
    Design and implement automatic process of generating reports and price files using python, SQL and VBA.

- Research Assistant at Revenue Management Solutions (Singapore) Phase I: *Sep. 10th, 2017 - Nov. 10th, 2017*
  Phase II: *Jan. 22nd, 2018 - Mar. 25th, 2018*
  - Develop an optimal tool for our Hierarchical Bayesian model, implement mixed logit model, structural equation modeling and multilevel models on R using packages such as mlogit, lme4, lavaan, and RSGHB.

- Quality Control at AC Nielsen Corporation (Shanghai) *Oct. 8th, 2016 - April. 28th, 2017*
  - Organize data, monitor data collection process, data analysis, co-worker of data quality analysis development from statistical approach.