Bui Thi Quynh Trang

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Research Interest Statistical Modelling and Statistical Learning.

Education

University of Waterloo
2017-2018, Waterloo, ON, Canada
PhD in Statistics
GPA: **93.20**/100
Courses: Statistical Learning, Graphical Models and Stochastic Processes.

University of Waterloo
2017-2018, Waterloo, ON, Canada
Master in Statistics
GPA: **94.88**/100
Courses: Statistical Learning, Computer Inference and Stochastic Differential Equations.

Korean Advanced Institute of Science and Technology (KAIST)
2013 - 2017, Daejeon, Korea
Bachelor with Double Major in Mathematical Sciences and Business and Technology Manangement.
GPA: **3.91**/4.30 (**95.66**/100)
Courses: [Math] Mathematical Statistics, Real Analysis, and Numerical Analsysis.
[Business] Econometrics and Finance.

Studies & Projects

House price predictions by regression models
April 2018, School Project, Individual
Description: Apply and compare various regression techniques to predict house price from **SaratogaHouses** dataset. The methods include local regression, general additive models, random forests and tree boosting methods language: `R`.

Optimal trade execution in the nonlinear Almgren-Chriss model
September 2018, Master Graduation Essay
Description: Study the nonlinear Algren-Chriss transaction-triggered price impact model, prove that the optimal trade execution remains unchanged in addition of bid-ask spread.

R Implementation of High-dimensional Vector Autoregressive models
April 2018, School Project, Team
Description: Incorporate results from two main papers of Basu et al. (2013) and Basu et al. (2015) into `varngc` package in R. This package accommodates two loss functions (a) penalized least square and (b) penalized log-likelihood; and two penalty schemes of (i) lasso and (ii) group lasso by implementing parallelizable algorithms. Test the package using a simulation study and a financial application on stock price. Language: `R`

Forecasting Financial Time Series by Deep Learning Techniques
December 2017, School Project, Individual

Description: Apply available techniques to forecast time series, such as GARCH-family models, fuzzy time series models, and popular deep neural networks (LSTM, CNN, and FFN). Propose time series decomposition model for data preprocessing, evaluate the results of the technique. Language: `R` & `python`.

Machine Learning Techniques Applied to Stock Market Trading
December 2017, School Project, Team
Description: Use popular neural networks to classify momentum of stocks. Investigate the use of autoencoders in dimension reduction. Propose separate autoencoding. Perform backtesting on shor-term portfolio performance. Language: `R` & `python`.

Flash Crash: An Investigation by Multi-Agent Simulations
November 2016, Undergraduate Graduation Research, Individual
Description: Use Multi-Agent model to simulate the stock market with heterogeneous participants, and to simulate flash crash. Investigate the effect of sensational traders and delay of information on market in different scenarios. Language: `python`

Industry experience

Sun Life Financial
May 2018 - present, Data Science Intern
Contribution: Develop a systematic workflow to extract, manage, analyze and visualize basis risk data for segregated funds using Excel VBA and Tableau.

PWC Vietnam
January 2017 February 2017, Consulting Intern
Contribution: Manage, extract, analyze, and visualize employee engagement and customer satisfaction data of Vietnam Commercial Bank using R and Microsoft Excel. Write a VBA program to speed up the report writing process, lessen the time from 1 month to 1 week. Write a VBA toolbox to summarize survey data for future projects.

Honors & Awards

Statistics & Actuarial Sciences Entrance Award for Doctoral Students
Aug 2018
An entrance award for top incoming PhD students in Department of Statistics and Actuarial Sciences, University of Waterloo.

Best undergraduate thesis presentation award
December 2016
Article: http://mathsci.kaist.ac.kr/home
An award for best undergradute thesis presentation of KAIST Department of Mathematical Sciences. The award is given upon the undergraduate thesis presentation day held every semester.

KAIST Undergraduate Full Scholarship
Sep 2013 - Aug 2017

Personal skills

Programming languages: Python, R, MATLAB
ML libraries: `scikit-learn`, `keras`, `numpy`, `pandas`, `matplotlib`, `ntlk`
Tools & Softwares: Microsoft Excel VBA, Tableau, `STATA`, and LaTeX .
Languages: Vietnamese (native), English (fluent), Korean (advanced, TOPIK 5/6), Mandarin (conversational).