Kim Eng Ky

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EDUCATION

Bachelor of Arts, Macalester College, Saint Paul, Minnesota — Sep 2012 – May 2016

- Majors/Minor: Applied Math & Statistics and Economics/Computer Science
- Cumulative GPA: 3.78 / 4.0
- Honors Thesis: How do changes in gasoline prices affect transit ridership in the twin cities?
- Relevant Coursework: Survival Analysis, Generalized Linear Mixed Models, Bayesian Statistics, Probability, Mathematical Modeling, Computational Linear Algebra, Collective Intelligence, Econometrics

AWARDS

- Metro Transit's Employee Recognition — Jul 2018
  For superior service to Metro Transit and its customers
- John M. Dozier Prizes in Economics — Apr 2016
  For demonstrated academic excellence.
- Omicron Delta Epsilon International Honor Society for Economics — 2015 – 2016
  For outstanding achievements in economics.

PUBLICATIONS

CONFERENCES

[1] Huting, J., Reid, J., Nwoke, U., Bacarella, E., and Ky, K.E. (2016). Identifying Factors That Increase Bus Accident Risk by Using Random Forests and Trip-Level Data. *Transportation Research Record: Journal of the Transportation Research Board*, (2539), 149-158.

PRESENTATIONS

POSTER PRESENTATIONS

[1] Huting, J., Ky, K. E., Lind, E., Freese, R., and Pansch, J. (2018). Understanding Public Transit Rider Satisfaction Using Clustering and Bayesian Regression Methods. *Transportation Research Board 97th Annual Meeting*, (No. 18-05209).

INVITED TALKS

[2] *Applied Probability and Statistics Seminar Series at University of St. Thomas*: Metro Transit Customer Satisfaction Survey - from data to conference poster — Mar 2018

[3] *R Ladies Twin Cities Chapter*: Introduction to R Shiny — Nov 2017

[1] *Beyond Mac Seminar Series at Macalester College*: Data Analysis at Metro Transit — Oct 2017

WORK EXPERIENCE

Data Scientist, UnitedHealth Group, Minnetonka, MN — Aug 2018 – Present

Data Scientist, Metro Transit, Minneapolis, MN — Feb 2017 – Aug 2018

- Receive employee recognition award at the Transportation Committee meeting for superior service to Metro Transit and its customers
- Contribute to an internal R package including designing R Shiny application template, Shiny gadget for filtering spatial data, and functions to pull data from relational databases
- Design, develop and maintain R Shiny applications to visualize spatial data, time series, regression analysis output, and survey data
- Perform monthly transit ridership forecasts at route-level and mode-level using Auto-Regressive Integrated Moving Average Model, Exponential Smoothing State Space Model, and Seasonal Decomposition of Time Series using Loess
- Develop and maintain internal weekly performance reports for bus routes affected by the construction on I-35W highway
- Analyze survey data (e.g. Customer Satisfaction survey and Employee Engagement survey) using Partition Around Medoid clustering method and Bayesian logistic regression
- Estimate bus time budget (in-motion time, passenger dwell, and other delays) and reliability metrics (e.g. speed and travel time) using automatic vehicle location records

Research Analyst, The Brattle Group, Washington, DC Jul 2016 – Feb 2017

- Designed and ran Monte Carlo simulations on historical stock and bond returns to estimate expected returns for portfolios with different stock-to-bond ratios using Oracle Crystal Ball and visualize the results by making plots in R using *ggplot2*
- Reviewed and summarized legal documents, literature, and analyst reports
- Estimated quantity demanded based on price and price elasticity of demand derived from literature
- Audited spreadsheets, regression and data manipulation in R, and economic expert reports

Research Analyst Intern, Metro Transit, Minneapolis, MN May 2014 – May 2016

- Designed models and R Shiny apps to analyze transit ridership trends and forecasting which are used by analysts and schedulers across Metro Transit
- Presented the R Shiny apps to agency-wide audience
- Conducted intensive literature review and statistical analysis on bus accidents, on-time performance, and cross-price elasticities of transit ridership with respect to gasoline prices
- Identified and solved problems with missing values in the data
- Analyzed survey data, visualized the output, and wrote the summary and findings
- Developed models and visualization to explore bus speed at every hundredth of a mile

Survival Analysis Teaching Assistant, Macalester College, Saint Paul, MN Fall 2015

- Held weekly help sessions to assist students with understanding class materials
- Graded homework and lab assignments

Data Science TRAIn Lab Member, Macalester College, Saint Paul, MN Jan 2015 – Dec 2015

- Read, discuss and analyze Machine Learning papers weekly
- Use spectral clustering to group S&P500 stocks based on their historical prices

Python Teaching Assistant, Macalester College, Saint Paul, MN Spring 2014

- Graded homework and lab assignments
- Assisted professor in answering students' questions during class time for three hours a week

Research Assistant, Economics Department, Macalester College, St. Paul, MN Sep 2012 – Oct 2014

- Researched using various databases to produce annotated bibliography for various topics
- Collected, compiled and cleaned data on real exchange rates for 25 different countries over a decade, U.S.-Mexico Imports and Exports, and U.S. Inputs-Outputs

COMPUTER SKILLS

Proficient: R, R Shiny, Microsoft Excel, LaTex, SQL
Familiar: Git, Python, Stata, Java, Stan