Kristyn Pantoja

Texas A&M University, Department of Statistics

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Education

Texas A&M University — *College Station, Texas*

PhD Candidate, Statistics — *Aug 2017 - May 2022 (expected)*

University of Pennsylvania — *Philadelphia, Pennsylvania*

BA, magna cum laude, Mathematics, Minor in Philosophy — *Aug 2013 - May 2017*

Experience

EMD Serono, Merck KgaA — *Billerica, MA (remote)*

Pharmacometry Intern — *May 2020–Aug 2020*

- Implemented a novel Bayesian experiment design for dose escalation in Phase I clinical trials in oncology using R and Stan
- Conducted simulation studies to compare the design method to rule-based and model-based designs
- Accepted for a poster session hosted by ASCPT

H-E-B — *San Antonio, TX*

Data Science Intern — *May 2018–Aug 2018*

- Implemented recommender system for complementary products using Siamese LSTM Neural Network using Python and Keras (with Tensorflow backend)
- Aggregated transactional data and created labels for model training data based on similarity measures using SQL
- Demonstrated viability of model for predicting complementary products

Projects

Supervised log-ratios regression

Jing Ma, David Jones, Kristyn Pantoja — *Oct 2020–Present*

- Propose a microbiome-based prediction model that utilizes hierarchical clustering based on a novel distance measure to construct multi-resolution predictive signatures

Minimum energy designs for model selection

Kristyn Pantoja, David Jones, Rui Tuo, Huiyan Sang — *Feb 2019–Present*

- Propose a Bayesian experiment design method for regression problems where model selection and model checking are of interest
- Apply the design method to linear models, Gaussian Process models, and the variable selection problem

Graph signal processing analysis on air traffic network disruptions

Max Z. Li, Karthik Gopalakrishnan, Hamsa Balakrishnan, Kristyn Pantoja — *Jan 2019–Jun 2019*

- Analyzed the distributions of delays across airports and showed that attributes of the eigenvector modes and energy contributions are useful metrics to characterize specific disruptions caused by events such as noreasters, Atlantic hurricanes, and equipment outages

Word vectors for variational autoencoding topic modeling

Patrick Ding, Kristyn Pantoja — *Sep 2018–Jan 2019*

- Investigated the benefits of combining word embeddings and autoencoding topic models
- Implemented variational autoencoding topic models using pytorch

Publications

Accepted

- M. Z. Li, K. Gopalakrishnan, K. Pantoja, H. Balakrishnan (2020). "Graph signal processing techniques for analyzing aviation disruptions." *Transportation Science*.

Published

- M. Z. Li, K. Gopalakrishnan, K. Pantoja, H. Balakrishnan (2019). "Spectral approach towards analyzing airport performance and disruptions." *Thirteenth Air Traffic Management Research and Development Seminar.* (Best Paper: Performance Analysis and Metrics)

In Progress

- K. Pantoja, D. E. Jones, R. Tuo, H. Sang (2020+). "Minimum energy designs for model selection."

Skills

Programming Languages

R – Python – Rcpp

Other

Git – Markdown – LaTeX – Rstudio – cluster computing