Lin Deng

Last update: March 2, 2020

CONTACT INFORMATION

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RESEARCH INTERESTS

Bayesian Econometrics, Applied Machine Learning, Pricing Strategy, Operation Research, Data Science

EDUCATION

University of Minnesota, Twin Cities — Minneapolis, MN USA
M.S., Industrial and Systems Engineering (Analytics) — Sep 2017 - Jun 2019
GPA: **3.31/4**
Advisor: Prof. William L. Cooper

Nankai University, Binhai College — Tianjin China
B.M. — Industrial Engineering — Sep 2007 - Jun 2012
GPA: **87.19/100** (rank:**1/65**)
Thesis: *Research on Chinese Enterprise Supplier Selection and Evaluation Mechanism in the Big Data Era*

COURSES TAKEN

Optimization, Stochastic Process, Machine Learning, Decision Analysis, Data-Driven Decision Analytics, R Programming, Applied Regression Analysis, Operation Research, Principles of Economics, Probability and Statistics, Statistics, Database and SQL Programming, Accounting and Financial Management

RESEARCH PROPOSAL

Gaussian Process for Online Real-Time Pricing

RESEARCH EXPERIENCE

Price Competition and Seats Allocation within International Airline Alliance
China Eastern Airlines – Commercial Committee — Jan 2020 - present

- Designed to model the relationship between sales price and seat allocation in subgroups within the alliance (e.g., codeshare flights) to increase expected profits.
- Estimated seat load factor measurement error by days before departure base on past 5-year flight data and stochastic demand simulation.

An Empirical Study of the Bid Forecast and Pricing Strategy for the North American HVAC Market
(sponsored by Daikin Applied Americas) — Sep 2018 - Dec 2018

- Designed a pricing strategy based on historical bid data and the bidding process. Predicting the bid outcome in North American HVAC market by using a ensemble Machine Learning method which was inspired by Facebook Ads Clicking Prediction Method. Achieved prediction accuracy: 81%, recall (true positive rate): 82%
- Set up a Back-tested the pricing strategy base on Daikin bid data for both strategy design and bid price adjustment. Provided an efficient solution to clean and process bidding & component data and deploy it to models. Obtained a strategy of average profit of about 9% annual return over past 10+ years' bid log

Handling Imbalanced Data – American Census Income Data — Mar 2018 – May 2018

- Collected statistics on the income – American Census data. Used the SMOTEBoost and RUSBoost to classify the imbalanced income data
- Use the NäıveBayes classifier to build the model and use cross-validation to select the number of features to include. And use Bayesian networks to find the internal relationships between features and labels

Modeling Survivability of Breast Cancer — Jan 2018 – Mar 2018
(sponsored by University of Minnesota Public Health Dept)

- A comprehensive breast cancer cell survivability models enable identifying and targeting women at high-risk, while reducing too-early interventions in those at low-risk

- Applied ML-based estimates models include clustering, boosting, tree-methods to find out relevant variables that can improve discriminatory accuracy
- Results are used to recommend screening guidelines for potential patients and the design of future treatment assessment models

Work Experience

China Eastern Airlines – Commercial Committee — Shanghai China
Strategic Pricing Consultant — Dec 2019 – present

- Query and analyze passenger ticketing data to gain market knowledge, and leverage that knowledge to inform future pricing decisions
- Create deal negotiation models and parameters for China – Australia Airline Sales that maximize Revenue and support commercial objectives
- Future work will involve Game Theory model for Airlines Pricing

Guoyuan Agricultural Insurance CO., LTD, — Hefei, Anhui China
Data Scientist Intern — Jun 2018 – Aug 2018

- Provided an efficient solution to import and clean insurance data and deploy it to SQL databases to improve efficiency in update
- Maintained a website to put project's related information online to reduce document cluster and accelerate data preparation pipeline
- Developed an advanced R function library to perform efficient data analyses including covariates selection, automated report generation for over 3 projects

Honors and Awards

the First Prize Scholarship	2014
the Second Prize Scholarship	2015, 2016
NKBH Merit Student Award	2015
Outstanding Graduate	2017

Skills

Programming: Python, R, SQL, Matlab, C\C++
Software and Tool: Scikit, PyTorch, PySpark, RShiny, Rmarkdown, Tableau, AMPL
Certificate: Six Sigma Green Belt (IISE – Institute of Industrial & Systems Engineers)
Languages: English(professional), Chinese(native)
Standard Test: GRE: 150V, 170Q 2AW (Sep 04, 2016)