

Sakitha Ariyaratne, Ph.D.

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PROFESSIONAL SUMMARY

Accomplished **Data Scientist** with a **Ph.D. in Operations Research** and a **Master's in Statistics**, offering over 6 years of experience in developing and implementing advanced optimization, statistical, and machine learning models for diverse business applications and academic research. Specialized in developing stochastic optimization models and develop algorithms. Proven expertise in **Python, R, C++, SQL**. Committed to delivering high-quality products on schedule working within multidisciplinary teams.

TECHNICAL SKILLS

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|---------------------------|--------------------------|---------------------|----------------|
| • Linear Programming | • Robust Optimization | • Predictive Models | • Python/R/C++ |
| • Dynamic Programming | • Machine Learning | • Forecasting | • SQL |
| • Stochastic Optimization | • Portfolio Optimization | • Simulation | • CPLEX/Gurobi |

EXPERIENCE

Data Scientist, BHG Financial. 2022 - Present

- Developed a **mixed-integer programming** optimization engine in Python and integrated it with an R Shiny interface to automatically generate optimal loan blocks for bank sales, providing optimal rate recommendations while maximizing gain on sale and achieving over 75% reduction in solving time through constraint normalization and parameter tuning.
- Collaborated closely with cross-functional teams to engineer a performance evaluation metric, a customer ranking system, and a **routing optimization model** to maximize per-customer margin, leading to a significant 6.5% boost in revenue.
- Devised an **assignment model** to identify the most profitable customer segments and allocate them to the optimal team, aiming to maximize revenue from lead data, which resulted in a 4% increase in lead conversion rate.
- Developed a lead conversion **logistic regression model** to score leads, inform commission decisions, and drive strategic planning. This model served as a predictive tool for bench-marking performances.
- Developed an **XGBoost model** to accurately forecast the selling time, achieving a significant reduction of 25% in the time-to-sell.
- Developed a **predictive model** to assess customer negotiation power, estimating their likelihood to negotiate prices relative to the initial pricing. This model was strategically designed to inform pricing decisions within the company.

Predictive Analytics Summer Intern, BHG Financial. 2022

- Engineered a **pricing optimization** model that effectively reduced the time required for pricing decisions by 50%.

Research Assistant, Southern Methodist University. 2018 - 2022

- Developed a novel, attractive, and cost-effective pricing mechanism for the electricity auction market with uncertain inputs, **optimizing the network flow** and minimizing the total cost of operations in the network leveraging **stochastic programming** methods.
- Developed a scenario generation simulation method using **time series analysis** and change point detection methods to forecast the uncertain inputs.
- Developed fast and **efficient algorithms** to solve coordinating operations and pricing in a multi-agent environment.

Teaching Assistant, Sam Houston State University. 2016 - 2018

- Developed a performance evaluation metric using survival analysis methods.

EDUCATION

Ph.D. in Operations Research , Southern Methodist University, Dallas, TX	GPA: 3.81/4.00
M.Sc. in Statistics , Sam Houston State University, Huntsville, TX	GPA: 3.92/4.00
B.Sc. in Statistics and Operations Research , University of Peradeniya, Sri Lanka	GPA: 3.82/4.00

PUBLICATIONS

- S. S. S. Ariyaratne, H. Gangammanavar, and R. Sundararajan. "Change Point Detection-based Simulation of Nonstationary Sub-Hourly Wind Time Series." *Applied Energy*, vol 310, 2022.
- S.S.S. Ariyaratne. "Study Of Stochastic Market Clearing Problems In Power Systems With High Renewable Integration" scholar.smu.edu