CURRICULUM VITAE

Max Biggs

January 2024

EDUCATION _____

2014 - 2019   **Massachusetts Institute of Technology**, Ph.D.
Operations Research Center
Advisor: Prof. Georgia Perakis

2010 - 2013   **University of Auckland, B.Eng.(hons)**
First class honors
Major: Engineering Science

EMPLOYMENT _____

2020-   **Assistant Professor of Business Administration**
Quantitative analysis group
Darden School of Business

2019/20   **Post-Doctoral Researcher, IBM Watson**
Part of AI for travel industry team, developed algorithms for interpretable data-driven pricing using machine learning.

2019   **Adjunct Professor Darden School of Business, University of Virginia**
Taught two sections of the core Decision Analysis course

2016   **Research Intern, Amazon**
Formulating and coding a large-scale advertising optimization problem to solve within a tight time frame

2015/16   **Planning Consultant, Thenamaris Shipping Company**
Working on algorithms to design ship routes based on dynamic availability of cargoes

2014   **Data Scientist, Harmonic Analytics Limited**
Provided consulting services to help clients create value from their data using mathematical and statistical models.

PUBLISHED PAPERS AND CONFERENCE PROCEEDINGS_____

Biggs, M., Hariss, R., Perakis, G., Optimization of objective functions determined from random forests. *Production and Operations Management,* 2022.

Gao, R., Biggs, M., Sun, W., Han, L. (Accepted), Enhancing counterfactual classification using self-training. *Proceedings of the Thirty-Sixth AAAI Conference on Artificial Intelligence,* 2022.

Alley, M., Biggs, M., Hariss, R., Hariss, C., Li, M., Perakis, G., Pricing for heterogenous products: analytics for ticket reselling. *Manufacturing & Service Operations Management*, 2022.

Biggs, M., Sun, W., & Ettl, M. Model distillation for revenue optimization: Interpretable personalized pricing. In *International Conference on Machine Learning* (pp. 946-956). PMLR, 2021.

WORKING PAPERS _____

Biggs, M., Perakis, G., Tightness of prescriptive tree-based mixed-integer optimization formulations (Submitted), 2023.

Biggs, M., Convex Loss Functions for Contextual Pricing with Observational Posted-Price Data (Major revision Management Science), 2022.

Biggs, M., Gao, R., Sun, W. Loss Functions for Discrete Contextual Pricing with Observational Data (Major revision Operations Research), 2021.

Biggs, M., Prescriptive analytics for operations problems: a tree ensemble approach. PhD thesis. 2019.

Biggs, M**.,** Perakis, G., A ranking algorithm for tramp shipping in the spot market (R & R Management Science). 2017.

TEACHING EXPERIENCE _____

ASSISTANT PROFESSOR (DARDEN SCHOOL OF BUSINESS)
Fall 2023	**Decision Analysis 1 (2 sections)**
Spring 2023	**Decision Analysis 2 (2 sections)**
Spring 2022	**Decision Analysis 2 (2 sections)**
Fall 2021	**Decision Analysis 1 (2 sections)**
Spring 2021	**Decision Analysis 2 (2 sections)**

ADJUNCT PROFESSOR (DARDEN SCHOOL OF BUSINESS)
Fall 2019	**Decision Analysis 1 (2 sections)**

TEACHING ASSISTANTSHIPS (MIT)
Summer 2017	**Intro to Operations Management (executive MBA)**
Fall 2016 -	**Data Models and Decisions (executive MBA)**

HONORS AND AWARDS _____

2019	**MSOM Practice Based Research Finalist** Awarded for paper entitled: "Pricing for heterogenous products: analytics for ticket reselling"

2018   **INFORMS Data Science Best Paper Award**
1st place, awarded for paper entitled: "Optimization objective functions determined from random forests"

2017   **Service Science Best Cluster Award Finalist**
Awarded for paper entitled: "A ranking algorithm for tramp shipping in the spot market"

2014   **William Georgetti Fellowship**
Awarded by Governor General of New Zealand

2010   **Bronze medalist International Biology Olympiad**

2009   **Dux and Deputy Head Boy**
Scots College, Wellington, New Zealand