LEANN THAYAPARAN

(315) 715 - 1760 ⋄ lpgt@mit.edu

EDUCATION

MASSACHUSETTS INSTITUTE OF TECHNOLOGY   Cambridge, MA
Doctor of Philosophy in Operations Research   2019-2024
GPA: 5.0/5.0
Advisor: Georgia Perakis
Research Interests: Machine Learning, Optimization, Revenue Management, Behavioral OM.

Masters of Business Analytics   2018-2019
GPA: 4.9/5.0
Awarded MIT Sloan School of Management Dean's Fellowship for outstanding academic record, personal achievements and professional promise.

PRINCETON UNIVERSITY   Princeton, NJ
Bachelors of Science and Engineering in Operations Research and Financial Engineering   2012-2016
GPA: 3.8/4.0
Graduated with High Honors
Received Certificate in Engineering and Management Systems
Thesis: An Analysis of Television Show Viewership Growth through SIR Models - used classic epidemiology models to predict the spread of television viewership by applying principles of social contagion.

PUBLICATIONS

SUBMITTED AND WORK IN PROGRESS [1]

1. Bennouna, M. A., Nze-Ndong, D., Perakis, G., Singhvi, D., Skali Lami, O., Spantidakis, I., Thayaparan, L., and Tsiourvas, A., 2022, **Machine Learning Ensemble Prevalence Predictions for COVID-19**, published at *Manufacturing and Service Operations Management*.
   ICSS Best Conference Paper Award 2021 (Institute for Operations Research and the Management Sciences)
   Finalist of the Doing Good with Good OR Competition 2021 (Institute for Operations Research and the Management Sciences)
   Finalist of the Public Sector Operations Research Best Paper Competition 2021 (Institute for Operations Research and the Management Sciences)

2. Baardman, L., Cristian, R., Perakis, G., Singhvi, D., Skali Lami, D. and Thayaparan, L., 2022 **The Role of Optimization in Some Recent Advances in Data-driven Decision-making**, published at *Mathematical Programming*.

3. Cramer, E.Y. et. al., 2022, **Evaluation of Individual and Ensemble Probabilistic Forecasts of COVID-19 Mortality in the United States**, published at *Proceedings of the National Academy of Sciences*.

4. Perakis, G., Singhvi, D., Skali Lami, O. and Thayaparan, L., 2022, **COVID-19: A Multiwave SIR-based Model for Learning Waves**, published at *POM*.

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[1]authors are ordered in alphabetical order of last name

Second Place in Service Science Best Student Paper Award 2021 (Institute for Operations Research and the Management Sciences)
Accepted at the Healthcare Operations SIG Meeting 2021.

5. Perakis, G., and Thayaparan, L., Co-authors from Oracle, 2023, **UMOTEM: Upper Bounding Method for Optimizing over Tree Ensemble Models**, submitted to *Management Science*.
Finalist of the Jeff McGill Student Paper Award 2022 (Institute for Operations Research and the Management Sciences)
Finalist of the POMS College of Supply Chain Management Best Student Paper Competition 2023

6. Perakis, G., and Thayaparan, L., Co-authors from GM, 2022, **The Role of Electric Vehicle Driver Behavior in Moving to Zero Emissions**, soon to be submitted to *Operations Research*.

7. Cohen-Hillel, T., Perakis, G., Spantidakis, I., and Thayaparan, L., 2022, **The SAFE Method for Feature Reduction and Prediction**, soon to be submitted to *Journal of Machine Learning*.

8. Thayaparan, L., 2016, **An Analysis of Television Show Viewership Growth through SIR Models**, Undergraduate Thesis, Princeton University.

HONORS AND AWARDS

- 2023: Finalist of the POMS College of Supply Chain Management Best Student Paper Competition

- 2022: Finalist of the Jeff McGill Student Paper Award (Institute for Operations Research and the Management Sciences)

- 2021: ICSS Best Conference Paper Award (Institute for Operations Research and the Management Sciences)

- 2021: Finalist of the Doing Good with Good OR Competition (Institute for Operations Research and the Management Sciences)

- 2021: Finalist of the Public Sector Operations Research Best Paper Competition (Institute for Operations Research and the Management Sciences)

- 2021: Second Place in Service Science Best Student Paper Award (Institute for Operations Research and the Management Sciences)

CONFERENCE PRESENTATIONS

Perakis, G., and Thayaparan, L., Co-authors from Oracle, **UMOTEM: Upper Bounding Method for Optimizing over Tree Ensemble Models**.
2023 POMS Annual Conference in Orlando, FL
2022 INFORMS Annual Conference in Indianapolis, IN
2022 Young Researchers Workshop Cornell ORIE
2022 Manufacturing & Services Operation Management Conference in Munich, Germany
2022 POMS Annual Conference, virtual
2021 INFORMS Annual Conference, virtual
2021 Revenue Management & Pricing Conference, virtual

Perakis, G., and Thayaparan, L., Co-authors from GM, **The Role of Electric Vehicle Driver Behavior in Moving to Zero Emissions**.
2023 Manufacturing & Services Operation Management Conference in Montreal, Canada
2023 POMS Annual Conference in Orlando, FL

2023 Early-Career Sustainable OM Workshop in Amherst, MA
2022 INFORMS Annual Conference in Indianapolis, IN

Perakis, G., Singhvi, D., Skali Lami, O. and Thayaparan, L., **COVID-19: A Multiwave SIR-based Model for Learning Waves**.
2022 POMS Annual Conference in Orlando, FL
2021 INFORMS Annual Conference, virtual
2021 INFORMS Healthcare Conference, virtual
2021 SIG Manufacturing & Services Operation Management Conference, virtual

Cohen-Hillel, T., Perakis, G., Spantidakis, I., and Thayaparan, L., **The SAFE Method for Feature Reduction and Prediction**.
2020 INFORMS Annual Conference, virtual

INDUSTRY COLLABORATIONS, GRANTS AND PATENTS

Industry Collaborations and Grants

Co-wrote research proposal for industry collaborator General Motors. Received funding for three years of a doctoral student and a masters student

Co-wrote research proposal for industry collaborator Oracle Retail, submitted to the External Research Office, which reviews grants and makes funding decisions. Received funding for a year of a doctoral student

Patents

US 20230096633 A1 - "Optimized tree ensemble based demand model" (L. Thayaparan, K. Panchamgam, S. Borjian, G. Pearkis) Invention disclosure filed September 2021

TEACHING EXPERIENCE

MIT SLOAN Teaching Assistant for Executive MBAs
Data, Models and Decisions, 15.730   *2021-2022*

· Spring 2021, Rating: 6.5/7
· Spring 2022, Rating: 6.6/7

PROFESSIONAL EXPERIENCE

General Motors   Austin, TX
Masters Capstone Intern, Advanced Analytics Center of Expertise   *2019*

· Aggregated raw driver data into an intuitive and robust "congestion score" to track traffic flow in real time
· Built an ensemble forecasting model to predict traffic congestion a day, hour and ten minutes in advance using boosted trees and vector autoregression
· Demonstrated that the congestion forecasting model performed out of sample with an R2 of 0.71, a significant improvement over the previous baseline of 0.38

MIT SLOAN / ACCENTURE / MORNINGSTAR   Cambridge, MA
Team Member, Analytics Project on financial impact of innovation in asset management   *Fall 2018*

· Built innovation scores for 26 asset management firms to capture firm investment in emerging technology based on 8 years of Factiva media data

· Explored correlation between innovation scores and financial growth to understand how innovative culture affects performance; determined no predictive relationship
· Presented analysis to managing directors at Accenture and Morningstar

MCKINSEY COMPANY Boston, MA
Senior Analytics Fellow, Operations Advanced Analytics *2016-2018*

· Developed and executed a customer-segmentation marketing personalization strategy using insights from a linear optimization model with an expected \$400K growth in profit; presented results to the client's CMO and VP team
· Refined an algorithm in SQL to predict a customer's next purchase based on their transaction history and presented analysis to educate the client's management team on the power and potential of predictive tools
· Designed and implemented New Hire Training for McKinsey's Operations Advanced Analytics practice

GOLDMAN SACHS New York City, NY
Summer Analyst, Investment Management Division (IMD) *Summer 2015*

· Developed a data compilation model, pulling information from over 15 different sources, to track the division's Strategic Initiatives, complete with methods for updating and data checks
· Tracked competitor press releases and summarized a comparison of competitors and Goldman Sachs for firm leaders
· Updated IMD's monthly performance models and answered follow up questions surrounding model outputs to help inform directors about the division's overall investment profit and risk

PROFESSIONAL SERVICE

Coordinator for the MIT ORC Seminar series (Fall 2022)

Coordinator for the ORC Student Seminar series (2021-2022)

President of the INFORMS student chapter at MIT (2019 - 2020)

ADDITIONAL INFORMATION

Technical Skills: R, Python, SQL, Julia, MATLAB

Interests: Medieval English and Poetry, Bharatha Natyam (classical Indian dance form), Cross-stitch