Lawrence Thul

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LinkedIn

Director of Artificial Intelligence with expertise in operations research, statistics, and machine learning. Specialized in designing and implementing advanced decision intelligence algorithms for complex systems in the physical world. Proven track record in building and leading technical teams, developing innovative AI solutions, and driving product development from concept to market launch. Passionate about building cutting-edge technology and problem solving.

EDUCATION

Princeton University, Princeton, NJ — *PhD, Electrical Engineering*

2018 - 2022

Thesis: "*Multi-Agent Sequential Decision Modeling for Information Collection and Intervention in Epidemics and Wildfires*"

Advisor: Warren B. Powell

Princeton University, Princeton, NJ — *MS, Electrical Engineering*

2018 - 2020

Northeastern University, Boston, MA — *BS, Electrical Engineering*

2014 - 2018

EXPERIENCE

Optimal Dynamics, NYC — *Director of Artificial Intelligence*

2021 - 2026

- Lead the Statistics and Machine Learning (SML) Group, overseeing strategic development of AI initiatives
- Lead R&D for “decision-native” AI Agents which enabled agentic products to be grounded in stochastic optimization artifacts
- Architected and launched industry-first bidding tool for truckload RFPs using stochastic optimization and ML, which has processed and provided recommendations for $1B+ worth of shipper RFPs
- Spearheaded data platform overhaul, reducing product time-to-value from weeks to days (3x speedup in overall time-to-value)
- Managed and scaled custom time series forecasting engine, supporting dozens of companies and led initiative to decrease training time by 450x
- Key contributor to our external freight sourcing product (Patent Pending)
- Formed, coached, and scaled up the Statistics and Machine Learning (SML) team. Managed 7 individuals including data scientists, analytics engineers, and software engineers, including coaching from junior to senior level roles

Princeton University, Princeton, NJ— *PhD Researcher*

2018 - 2022

- Published research on sequential decision modeling and algorithms for multi-agent systems
- Developed mathematical frameworks for resource allocation in epidemic control and wildfire management
- Researched stochastic optimization algorithms using parameterized lookahead approximations

MIT Lincoln Laboratory, Lexington, MA — *Biomedical Image Processing and AI Co-op*

Jul 2017 - Jan 2018

- Developed convolutional neural networks and clustering algorithms for 3D axon tracing in mouse brain imagery

SKILLS

Advanced Proficiency:
Python, SQL

Intermediate Proficiency:
Rust, AWS, Bazel, DBT, CPLEX/OR-Tools/HiGHS, Protobuf

Mathematics:
Reinforcement Learning, Probability & Statistics, Stochastic Optimization

SELECTED PUBLICATIONS

Thul, L., & Powell, W. (2023). Stochastic Optimization for Vaccine and Testing Kit Allocation for the COVID-19 Pandemic. *European Journal of Operational Research*, 304(1), 325-338.

Hernandez, M., et al. (2018). Learning-based Long-Range Axon Tracing in Dense Scenes. *IEEE 15th International Symposium on Biomedical Imaging*, 1578-1582.

INTERESTS

Golf, Programming, NFL/Fantasy Football, PGA Tour, Reading, Trivia