

LOUIS RAISON

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EDUCATION

MIT SLOAN SCHOOL OF MANAGEMENT

Cambridge, MA

Master of Business Analytics, Operations Research Center - GPA 4.9/5

2019 - 2020

- Received “**Best Capstone Award**”
- Coursework: **Machine Learning**, Optimization Methods, Supply Chain, Operations Management
- Projects: **Predicted the demand and optimized the allocation of taxis** in different districts of NYC to reduce the total distance traveled and the number of taxis; Optimized the deployment of Police patrols in Boston; **Predicted customer orders** on a location-to-warehouse lane to consolidate them for Lineage Logistics.

ÉCOLE POLYTECHNIQUE (L’X)

Palaiseau, France

M.Sc. in Engineering, B. Sc. in Engineering - GPA 3.9/4

2016 - 2019

- **Applied Mathematics** and Computer Science major, specialized in **High Performance Computing**
- Relevant coursework: Parallel/Distributed Computing, Computer Architecture, Operations Research, Machine Learning
- Invented a secure, direct exchange protocol for trading digital goods using Ethereum smart contracts technology, 2nd place at Blockchain Innovation Challenge, Columbia University.
- Optimized parallel computer settings for supercomputers at French Atomic Energy Commission using genetic algorithms.

WORK EXPERIENCE

DYNAMIC IDEAS LLC

Waltham, MA

AlphaRoute/H2O - Senior Data Scientist

November 2022 – Now

- Built and deployed emergency department nurse staffing and scheduling **optimization algorithms** for Hartford Hospital in Julia
- Designed advanced data cleaning, analytics, and visualization tools to handle vast amounts of school districts data in a Python package
- Created a novel framework for contracts negotiation in commercial legal departments, using **Large-Language Models (LLMs)**
- Developed cutting-edge **transportation optimization** algorithms to improve efficiency in large school districts across the United States.
- Deployed bell time overhaul for 100k+ students for a large US school district to reduce driver needs by 25%.
- Facilitated weekly trainings for data scientists/analysts on topics ranging from data analytics packages to high-level study of algorithms.

AlphaRoute - Data Scientist

September 2020 – October 2022

- Designed and implemented optimization algorithms for the transportation departments of 6 school districts in the United States.
- Developed a novel approach for street crossing restrictions within first employment month, addressing critical school district needs.
- Improved multiple existing heuristic/optimization algorithms, making them more flexible, readable, and cutting run time by up to 90%.
- Deployed backend serving an interface for school districts to manage their daily bus operations (planning, routing, and communication).
- Established a project management system for the company for tracking and general organization, using Notion and Teams.
- Created and coordinated a robust onboarding training program for new hires.
- Applied **machine learning** and optimization methods to insurance (Swiss Re), predicting bond default for construction companies.

MIT SLOAN SCHOOL OF MANAGEMENT

Cambridge, MA

Research Assistant for Professor Dimitris Bertsimas

September 2019 - August 2020

- Developed mixed-integer optimization and graph algorithms to deduct average speeds on maps using 10M+ GPS bus location logs.
- Collaborated with Swiss Re to **predict economic losses from natural disasters** and generated 20% improvement of loss prediction.

BMW GROUP / MIT SLOAN SCHOOL OF MANAGEMENT

Cambridge, MA

Capstone Project for the Master of Business Analytics

February 2020 - July 2020

- Classified vehicle brake noises using advanced deep learning techniques (**LSTM, CNN**) to reduce needs for expert manpower.
- Produced various client deliverables (presentations, posters, videos, and interface) to ensure the work would be easily integrated.
- Managed and coordinated the communication between the client, team members and professors.

NATIONAL INSTITUTE OF ADVANCED INDUSTRIAL SCIENCE AND TECHNOLOGY

Tsukuba, Japan

Visiting Researcher

April 2019- August 2019

- Created a music composition tool using advanced **Deep Learning** techniques (**LSTM-RNN**) to improve interactive composition.
- Conducted studies to find essential features for user experience in assisted music composition.

ADDITIONAL INFORMATION

- Technical Skills: **Python, Julia**, R, SQL, Java, C, Web Dev (HTML, CSS, JavaScript, php), **Git**, **ML packages (Tensorflow, Pytorch, Scikit-Learn)**, software (Illustrator, Photoshop)
- Soft Skills: mentorship, strategic thinking, strong verbal and written communication, active listening, organization, leadership.
- Open-source development: creator/maintainer of *ipyaggrid*, Python library enabling interactive tabular **data visualization** in a notebook.