

Ali FRADI

Industrial engineer

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 [ali-frady](#)

 [alifradi](#)

Profile

A dynamic and innovative Industrial Engineer with a strong foundation in statistical learning, machine learning modeling, and operational research problem solving. Known for excellent presentation and teamwork skills, with the ability to ease stress and conflicts in the workplace and initiate diverse discussions. Imminently graduating with a Research Master's degree in Industrial Engineering from Ecole Polytechnique de Montréal.

Summary

- Decent knowledge of statistical learning (Bayesian and Frequentist inferences) and common machine learning modeling.
- Expertise in operational research problem solving.
- knowledge in dynamic programming, reinforcement learning and multi-agent systems.
- Data wrangling with R is a fun for me.

Skills

- **IT tools:** R, Python , Matlab , VBA, Linux, Docker
- **Databases** Oracle Database, MySQL
- **Modeling** CPLEX, AnyLogic
- **Soft Skills:** Presentation, Planning, Creative Problem-Solving, Teamwork, Active Listening, Adaptability, Analytical Thinking

Professional Experience

Operational research scientist (*Polytechnique de Montréal - MECART*) **Montréal, Canada** 11/2022 - 05/2024

- Developed a linear program minimizing delays and completion times in the context of P-RCMPSP for an ETO industry to enhance tactical resources planning.
- The model includes preemptive tasks of multi-projects, overlapping tasks, and limitation of number of preemptions per task.
- Implementation of model on CPLEX IBM and testing of different formulations to analyze relaxation and objective functions impact on the model behavior.
- **Publications:** An article detailing the above work and its findings has submitted for presentation at conference ([Springer](#)). The article is currently under review for publication under the session: Transforming Engineer-to-Order Projects, Supply Chains, and Systems in Turbulent Times. More details will be provided upon official publication.

R&D Data Scientist (*Polytechnique de Montréal*) **Montréal, Canada** 09/2021 - 11/2022

- Prepared a review of literature of dynamic pricing in the context of lumber markets
- Lumber pricing is considered in the context of US-Canadian shared market where Quebec is key player.
- Lumber is considered as a derivative which has a fluctuating price influenced by studied factors with weekly reference published price.

R&D Data Scientist (*axefinance*) **Tunis, Tunisia** 02/2020 - 04/2021

- Built models to summarize financial sentiment, extract topics, define topic-document DNA and detect named entities in textual data.
- Developed a document recommendation engine to search for pertinent news articles about an industry.
- Contributed to static scorecard modeling for retail clients of UIB-Société Générale bank.
- Developed versions of a framework that automates data processing and major calculations to build a scorecard model. The framework considers exporting models as PMML format.
- Initiation of adopting CRISP-DM process to manage credit scoring projects.
- Functionized all modules into Plumber APIs that were consumed into a shiny dashboard.

Data Analyst ([Monsanto Bayer](#))

Bayonne, FRANCE 03/2019 - 10/2019

- Adopted CRISP-DM approach designed for industries to achieve the project.
- Development of dashboards: automate calculations and EMEA reporting.
- Modeling: prediction of sterility class of corn plants (hypothesis and data driven approach) to optimize the costs of detasseling plants and preserve the quality of the product.
- Deployment of the model on local server.

Education

Research Master degree in industrial engineering [Ecole Polytechnique de Montréal](#) Montréal, Canada 2021-2024

Relevant Courses: Operational research, stochastic optimization, multi-agent simulation & Reinforcement Learning:

- **Publications** a conference article presented as part of Reinforcement learning course studying the Double Q-learning algorithm ([A Reproducibility Study of Double Q-learning](#)).

- **Projects:** multi-agents simulation of Emergency Unit working system with Anylogic and re-engineering of BPM in order to enhance service quality, resources availability and agility to uncertainty

Industrial Engineering [National School of Engineers in Tunis \(ENIT\)](#)

Tunis, Tunisia 2016-2019

Relevant Courses: Numerical analysis, Operation Research, Machine Learning, Supply Chain Management & Mathematical finance **Pre-engineering intensive courses** [University of El Manar \(IPEIEM\)](#)

Tunis, Tunisia 2013-2016

Relevant Courses: Algebra, Chemistry, Physics, Mathematical Analysis & Mechanical Engineering science

Community life

- ([IAESTE](#)): Former junior member
- ([Industrial Engineering Club](#)): Former training manager
- ([TOM Condos](#)): receptionist, survey cameras, extract video scenes to the police, manage keys and entries, communicate with residents and administration
- ([L'EQUIPEUR](#)): shop assistant, manage stock of products, update deals posters, package and send online deliveries

Languages

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|-------------------------------|------------------------------|
| • English [TOEIC: 810] | • Arabic [Native] |
| • French [TCF: C1] | • German [Basic] - A1 |

Interests

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|---------------|-------------------------|
| • History | • Philosophy |
| • Calligraphy | • Cooking and traveling |