

HAMZA TAZI BOUARDI

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EDUCATION

MASSACHUSETTS INSTITUTE OF TECHNOLOGY

Candidate for Master of Business Analytics, [Operations Research Center](#), August 2020

Cambridge, MA

2019 – Present

- **Relevant Coursework:** Machine Learning for Healthcare, Optimization Methods, Robust Optimization, Statistical Learning Theory, Advanced NLP, Machine Learning under Optimization Lens, Applied Analytics, Analytics Lab
- **Analytics Lab Project with Morningstar:** Implemented a Reinforcement Learning (RL) framework to imitate portfolio managers in Python based on pre-implemented Proximal Policy Optimization algorithms and obtained an accuracy of 0.79 (vs. 0.89 with XGBoost)
- **Capstone Project and Summer Internship with Comcast:** Implemented a recommender system tool using collaborative filtering methods on a dataset of 3M+ customers' viewing profiles and 50K+ shows in order to inform marketing efforts and improve customer viewing experience

ÉCOLE CENTRALE PARIS

Master of Science in Applied Mathematics

Paris, France

2016 – 2019

Bachelor of Science in Engineering (4.13/4.33 — Top 1% of the 499-student class)

- **Relevant Coursework:** Statistical Inference and Estimation, Advanced Statistics, Measure Theory, Partial Differential Equations, Stochastic Processes, Software Engineering, Algorithmic and Programming
- **Undergraduate Teaching Assistant in Mathematics** at Lycée Sainte-Geneviève (2hours/week)

LYCÉE SAINTE-GENEVIÈVE

Major in Mathematics and Physics, Minor in Chemistry (4.0/4.0)

Versailles, France

2014 – 2016

- **Excellence Major Scholarship:** 5-Year Scholarship awarded by the French Ministry of Foreign and European Affairs on criteria such as academic excellence to the top 5% students of Lycée Lyautey's class of 2014

EXPERIENCE

MIT OPERATIONS RESEARCH CENTER

Research Assistant to Prof. [Dimitris Bertsimas](#)

Cambridge, MA

Sep 2019 – Present

- Participated to the Operations Research Center's initiative on COVID-19 (covidanalytics.io) as a main developer of the DELPHI epidemiological model predicting number of cases, deaths, hospitalizations and ICU patients worldwide
- Leveraged Optimal Classification Trees and Optimal Imputation methods on a dataset with EHR information and 1.2M+ rows in Julia and Python to predict mortality and morbidity for trauma patients with 0.93 and 0.77 AUC
- Applied 2 preprocessing techniques (normalization and skull-stripping) on brain MRI images and tuned 2D/3D Convolutional Neural Networks implemented in PyTorch to classify patients on likelihood of developing edema

BCG GAMMA

Data Scientist Intern

Paris, France

Feb 2019 – Aug 2019

- Refactored and upgraded an optimization tool solving crew disruptions for a major European airline: implemented 3 unit-tested new features and 12 bug fixes in Python ensuring better user experience and shorter runtime
- Developed and pushed into production an A/B Test protocol to measure a Churn predictive model's financial impact for a leading electrical supplies B2B distributor, showing \$1.5M achieved and \$32M projected gains
- Moderated weekly updates on churn impact measurement to partners and presented A/B Testing methodology and results to client's Chief Financial Officer in Europe

WAVESTONE

Data Scientist Intern

Paris, France

Aug 2018 – Jan 2019

- Enhanced a Random Forest model forecasting attendance at bus stops to optimize a company's bus lines with feature engineering and hyperparameter grid search, achieved Mean Absolute Percentage Error lower than 10%
- Improved a financial institution's audit processes by identifying divisions and files with high probability of anomaly through statistical outlier analysis and visualizations in Python
- Performed a comprehensive analysis of different AI Strategies and use cases in several industries (retail, financial services, etc.) used in case pitches by partners to company executives

ADDITIONAL INFORMATION

- Technical Skills: Python, R, Julia/JuMP, SQL, Bash, Git, L^AT_EX, PyTorch, Gurobi/Mosek, AWS/Azure, Linux
- Languages: French (Native), Arabic (Native), Spanish (Intermediate)
- Leadership: Captain of basketball college varsity team until 2018
- Interests: Judo (brown belt, Moroccan Regional and National Championships), soccer, video games