

Amine Bennouna

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ACADEMIC APPOINTMENTS

Kellogg School of Management, Northwestern University <i>Assistant Professor of Operations</i>	2025 – Evanston, IL
Laboratory for Information & Decision Systems, MIT <i>Postdoctoral Researcher</i>	2024 – 2025 Cambridge, MA

EDUCATION

Massachusetts Institute of Technology <i>Ph.D candidate in Operations Research</i> <ul style="list-style-type: none">• Advisor: Bart Van Parys• Thesis: Efficient Robustness and Interpretability in Learning and Data-Driven Decision-Making	2019 – 2024 Cambridge, MA
Ecole Polytechnique <i>Master of Science in Applied Mathematics</i> <i>Bachelor of Science in Mathematics and Computer Science</i>	2016 – 2019 Paris, France
Lycée Louis-le-Grand <i>Classes préparatoires, Mathematics, Physics, Computer Science</i>	2014 – 2016 Paris, France

RESEARCH INTERESTS

Data-driven Decision-making, Machine Learning, Optimization;
Distributionally Robust Optimization, Reinforcement Learning, Statistics.

PAPERS

- [1] From Distributional Robustness to Robust Statistics: A Confidence Sets Perspective ([link](#))
Gabriel Chan, Bart Van Parys & Amine Bennouna.
- [2] Certified Robust Neural Networks: Generalization and Corruption Resistance ([link](#))
Amine Bennouna, Ryan Lucas & Bart Van Parys.
*Accepted in **ICML 2023***
 - ★ *Runner-up of INFORMS 2023 Data Mining Best Paper Award (General Track)*
 - ★ *Winner of INFORMS 2023 Workshop on Data Science Best Student Paper*
- [3] Holistic Robust Data-Driven Decisions ([link](#))
Amine Bennouna & Bart Van Parys.
- [4] Learning and Decision-Making with Data: Optimal Formulations and Phase Transitions ([link](#))
Amine Bennouna & Bart Van Parys.
*Major Revision in **Mathematical Programming***
 - ★ *Winner of MIT Operations Research Center Best Student Paper 2022*
- [5] Learning the Minimal Representation of a Continuous State-Space MDP from Transition Data ([link](#))
Amine Bennouna, Dessislava Pachamanova, Georgia Perakis & Omar Skali Lami.
*Accepted in **Management Science***
- [6] COVID-19: Prediction, Prevalence, and the Operations of Vaccine Allocation ([link](#))
Amine Bennouna, Joshua Joseph, David Nze-Ndong, Georgia Perakis, Divya Singhvi, Omar Skali Lami, Yannis Spantidakis, Leann Thayaparan, Asterios Tsiourvas.
*Accepted in **Manufacturing & Service Operations Management***
 - ★ *Finalist of INFORMS Doing Good with Good OR 2021*
 - ★ *Honorable Mention Public Sector Operations Research Best Paper Competition 2021*
 - ★ *INFORMS ICSS Best Conference Paper 2021*

- [7] Shallow and Deep Networks are Near-Optimal Approximators of Korobov Functions ([link](#))
Moïse Blanchard & Amine Bennouna.
 Accepted in **ICLR 2022**
- [8] Robust Two-Stage Optimization with Covariate Data ([link](#))
Bart Van Parys & Amine Bennouna.

TEACHING EXPERIENCE

Optimization Methods, MIT 15.093/6.255	Rating
<i>Graduate (Masters, MBAn, PhDs), 180 students</i>	6.9/7 (79 ratings)
<i>Head teaching assistant, Fall 2021</i>	
Optimization Methods, MIT 15.093/6.255	Rating
<i>Graduate (Masters, MBAn, PhDs), 120 students</i>	6.5/7 (60 ratings)
<i>Teaching assistant, Fall 2020</i>	
The Analytics Edge, MIT 15.071	
<i>Graduate (MBA), 80 students</i>	
<i>Guest Lecturer, Fall 2023</i>	
The Advanced Analytics Edge, MIT 15.072	
<i>Graduate (MBAn), 100 students</i>	
<i>Guest Lecturer, Fall 2023</i>	
Mathematical Olympiad, Instructor	
<i>Morocco's national team IMO training 2017-2019</i>	
Advanced Mathematics, Classes Préparatoires	
<i>Instructor and examiner for Institut Bossuet (Lycée Louis-le-Grand, Saint-Louis, Henri IV)</i>	

RESEARCH MENTORSHIP

Mentored MIT Masters Research Assistants
<i>Ryan Lucas (then MIT ORC PhD), Gabriel Chan, Julien Pinede.</i>
Mentored MIT Undergraduate Research Assistants
<i>Janice Yang (then MIT MEng RA), Lowell Hensgen (then MIT MEng RA), Albert Luo, William Zhao.</i>

INDUSTRY EXPERIENCE

Google Research	Summer 2022
<i>Research Intern</i>	<i>New York, NY</i>
<ul style="list-style-type: none"> Designed and implemented novel learning algorithms for image classification under distribution shift. 	
Crédit Agricole Investement Bank	Summer 2018
<i>Data scientist intern</i>	<i>Singapore</i>
<ul style="list-style-type: none"> Designed and deployed a prediction-based optimization and pattern detection solution for budget optimization. 	

AWARDS

Finalist of INFORMS Service Science Best Cluster Paper	2024
Runner-up of INFORMS Data Mining Best Paper Award (General Track)	2023
INFORMS Workshop on Data Science Best Student Paper	2023
MIT Operations Research Center Best Student Paper Award	2022
Runner-up of INFORMS Doing Good with Good OR Student Paper Competition	2021
Honorable Mention in the Public Sector Operations Research Best Paper Competition	2021
Third Best Talk at CMU YinzOR Flash Talk Competition	2023
ICSS Best Conference Paper Award	2021
1st Prize Operations Research Center's Common Experience Deep Learning Challenge	2021
Top 2% in Kaggle Brain Tumor Classification Competition (Silver Medal)	2021
Robert B. Guenassia Award, MIT Office of Graduate Education	2021

Ecole Polytechnique 1st Prize of Research Internship in Applied Mathematics	2019
Chanoine Pierre Garand Award for Outstanding Undergraduate Pathway, Institut Bossuet	2016
Moroccan Merit Scholarship	2016
Honorable Mention in National French Physics Olympiad	2016
Honorable Mention in International Mathematical Olympiad (IMO)	2014

SERVICE AND OUTREACH

Reviewer: Operations Research, Management Science, INFORMS Journal on Optimization.

Session Chair: INFORMS Annual Meeting 2024, INFORMS Annual Meeting 2023, ICCOPT 2022 Conference.

Seminar Coordinator: MIT Operations Research Center Seminar; Spring 2023.

Initiatives: Co-Founder and President of Math&Maroc (2016-2019); Major Moroccan Education NGO.

TALKS

Invited Seminars: NYU Stern, BU Questrom, Michigan Ross, Northwestern Kellogg, UCL School of Management, Cornell ORIE, John Hopkins Carey, Purdue IE, UNC STOR.

Talks:

From Distributional Robustness to Robust Statistics

- INFORMS Annual Meeting, October 2024, Seattle WA

Holistic Robust Data-Driven Decisions

- INFORMS Annual Meeting Data Mining Best Paper Competition, October 2023, Phoenix AZ
- INFORMS Annual Meeting General Session, October 2023, Phoenix AZ
- CMU YinzOR Selected Flash Talk, August 2023, Pittsburgh PA
- SIAM Conference on Optimization, June 2023, Seattle WA
- Manufacturing & Services Operation Management Conference, June 2023, Montreal
- MIT ORC Seminar (Best Paper Award), February 2023, Cambridge MA
- INFORMS Annual Meeting, October 2022, Indianapolis IN
- MoroccoAI Webinar Invited Speaker, October 2022, virtual
- ICCOPT, July 2022, Bethlehem PA
- MIT ORC Student Seminar, October 2022, Cambridge MA

Certified Robust Neural Networks: Bridging Generalization and Corruption Resistance

- INFORMS Workshop on Data Science, October 2023, Phoenix AZ
- ICML, July 2023, Honolulu HI/virtual

Learning and Decision-Making with Data: Optimal Formulations and Phase Transitions

- MIT ORC Student Seminar, October 2021, Cambridge MA
- INFORMS Annual Meeting, October 2021, Anaheim CA

Minimal Representation Learning: Toward more Interpretable and Efficient Offline Reinforcement Learning

- INFORMS Annual Meeting Service Science Best Cluster Paper, October 2024, Seattle WA
- INFORMS Healthcare Conference, July 2021, virtual
- Manufacturing & Services Operation Management Conference Conference, June 2021, virtual
- MIT ORC Student Seminar, April 2021, Cambridge MA
- INFORMS Annual Meeting, November 2020, virtual

The Representation Power of Neural Networks

- ICLR, April 2022, virtual (poster session)
- MIT ORC Student Seminar, March 2021, Cambridge MA
- MIT SIAM Student Seminar, December 2020, Cambridge MA

Broader Audience:

- Moroccan Tournament of Young Mathematicians Guest Speaker, Al Akhawayn University, December 2024, Ifrane
- ThinkAI Hackathon Guest Speaker, UM6P University, May 2023, Benguerir