

Zakaria El Amrani

PhD candidate in Economics
Econometrics, Statistics
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EDUCATION

Northwestern University, Chicago, IL 2022 - 2027

Doctor of Philosophy in Economics

Areas of Specialty: Econometrics, Statistics

Advisors: Prof. Joel Horowitz and Prof. Eric Auerbach

Thesis: Essays in High Dimensional Models, Bootstrap Methods, and Networks Econometrics.

Master of Science in Economics, 2023.

Brandeis University, Waltham, MA 2014 - 2018

Bachelor of Arts in Mathematics (highest honors), *summa cum laude*

Relevant Courses (PhD): Advanced Econometrics, Mathematical Statistics, Times Series Analysis, Stochastic processes and Monte Carlo methods, Machine learning, Optimization, Random modeling, Analysis of Algorithms, Real Analysis, Probability, Dynamic Programming, Game Theory

INDUSTRY EXPERIENCE

National Bureau of Economic Research, Cambridge, MA 2023 (May-August)

Researcher

- Research on Data-Driven Healthcare Pricing using Machine Learning.
- Published two papers in the *Journal of the American Medical Association* and *Health Services Research*.

Harvard University, Cambridge, MA 2020-22

Research Associate, Department of Economics

- Research, data engineering, high dimensional model selection, and network construction in healthcare markets.

Cornerstone Research, Boston, MA 2018-20

Analyst

- Built statistical models to assess risk in structured finance products (CDOs, MBS)
- Constructed algorithms to simulate portfolio performance and risk in financial markets.

SKILLS AND ACTIVITIES

Languages	French (native), English (full proficiency)
Programming & Tools	Python(Tensorflow, Pytorch, Numpy, Pandas), Matlab, Julia, R
Sports	Distance running, Tennis

RESEARCH

Bootstrap Bias Correction for Improved Coverage Accuracy in Nonparametric Inference

Preprint, 2025

Partial-Identification of Networks from Short Panels. Joint with Eric Auerbach.

Preprint, 2026

Estimation of Stochastic Block Networks from Panel Data.

Preprint, 2025

Forward Looking Adoption Under Policy Uncertainty: Evidence From Healthcare.

Preprint, 2026

Optimal Penalty Choice in High Dimensional Models

(Ongoing work)

Sparse Network Estimation in Nodal Pricing: Propagation Multipliers and the Incidence of Battery Storage

(Ongoing work)

Quantifying the Solar Rebound with Smart Meter Data: The Role of Co-Adoptions Joint with Jacint Enrich, Natalia Fabra and Mar Reguant.

(Ongoing work)

Sparse Network Estimation in Nodal Pricing: Propagation Multipliers and the Incidence of Battery Storage

(Ongoing work)

HONORS AND AWARDS

University Fellowship, Northwestern University, 2022-2027

Dissertation Development Program, Northwestern University, 2025 fellow

Highest Honors in Mathematics, Brandeis University, 2018

Phi Beta Kappa Honor Society, 2018

TEACHING EXPERIENCE

Northwestern University, Teaching Assistant

- **Static Optimization** MECS 560-1, Fall 2025, PhD core course.

- **Dynamic Optimization** MECS 560-2, Spring 2023, PhD core course.

- **Probability and Statistics**, Fall 2023, Winter 2025, MBA core course.

REFERENCES

Prof. Joel Horowitz

Northwestern University

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Prof. Mar Reguant

Northwestern University, NYC.

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Prof. Eric Auerbach

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Prof. Meghan Busse

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