

# Andrés Aradillas Fernández

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## EDUCATION

**Cornell University, College of Arts & Sciences, Ithaca, NY**

Expected Graduation: May 2025

Bachelor of Arts in Mathematics

Cumulative GPA: 4.006/4.3; Major GPA: 3.943 / 4.3

**Related Courses:** Theoretical Linear Algebra and Calculus I & II (A,A), Statistics and Probability (A), Intermediate Micro/Macro (A+,A+), Econometrics (A), Intro to Machine Learning (A), Graduate Microeconomic Theory I (A), Intro to Computing Using Python (A-), Graduate Game Theory (A), Honors Analysis II (A-), Statistical Decision Theory (A+), Graduate Econometrics I & II (A+,A+), Simulation Modelling, Graduate Machine Learning in Econometrics Seminar (A+)

**Honors & Awards:** Dean's List • ODE Economic Honors Society

## RESEARCH/ACADEMIC EXPERIENCE

**Research Assistant, Cornell University**

October 2022-Present

Research assistant to Professors Francesca Molinari and Levon Barseghyan, Cornell University, Ithaca, NY

- Performed literature review of microeconomic theory papers dealing with salience theory
- Coded simulations in Python of various examples of discrete consumer choice with choice set-distorted preferences, as well as with choice set-dependent limited selection
- Wrote proofs for partial identification of choice set-dependent decision models

**Research Assistant – Econometrics Lab at Cornell University**

August 2024-Present

Performed research under Professors José Luis (Pepe) Montiel Olea, Joerg Stoye, and Chen Qiu

- Co-authored a recently submitted research paper on different definitions of the Robust Bayes minimax criterion
- Began working on another project focused on “approximate minimax” algorithms
- Involved in a less-official capacity since October 2023

**Junior Summer Analyst – Federal Reserve Bank of New York**

June 2024-August 2024

Performed research under Asani Sarkar in the Financial Stability team within the Research & Statistics Group

- Performed data analysis and cleaning in Stata
- Revised MATLAB code to produce measures of systemic risk for Non-Bank Financial Institutions (NBFIs)

**Teaching Assistant (ECON 4130 – Statistical Decision Theory)**

August 2023-December 2023

TA for Professor José Luis (Pepe) Montiel Olea, Cornell University, Ithaca, NY

- Prepared and revised typed-up class lecture notes in LaTeX
- Presented supplementary lectures on extensions of topics related to statistical decision theory, econometrics, and probability
- Held weekly office hours

**Visiting Research Intern at Columbia Business School**

May 2023-July 2023

Research Assistant to Professor Jing Dong, Columbia Business School

- Analyzed the following research question: How should AI triage function?
- Constructed novel stochastic models based on previous queueing theory work
- Performing stress tests and sensitivity analysis through Python simulations of models

**Quantitative Research Fellow, Program for Research in Markets & Organization**

June 2022-August 2022

Research Assistant to Professor Kyle Myers, Harvard Business School, Boston, MA

- Analyzed the following research question: What is the effect of clinical trial deaths on innovation?
- Developed R and STATA programs for data cleaning and econometric analysis, leading to a novel dataset
- Implemented synthetic control and synthetic difference-in-differences methods
- Conducted literature reviews to enhance focus of research and complement statistical analysis
- Engaged in weekly research seminars and case studies with HBS faculty and doctoral students, culminating in a final presentation of own research in front of a faculty panel

**Research Assistant, Harvard Business School (Unpaid)**

July 2022-March 2023

Researcher under Professor Lauren Cohen, Harvard Business School, Boston, MA

- Co-author on a Harvard Business Review article on family wealth management, “For God, Family & Steel: Lerman Enterprises”
- Article was used in a Harvard Business School MBA course on Family Offices in Spring 2023

**Undergraduate Researcher, Labor Dynamics Institute**

January 2022-January 2023

Researcher under Professor Lars Vilhuber, Cornell University, Ithaca, NY

- Performed data replication tasks using R, STATA, MATLAB, and Python for American Economic Association journals
- Collaborated using the file change tracking software Git, combined with the repository system Bitbucket
- Operated virtual machine systems such as CISER, BioHPC, and CodeSpace
- Improved Git template other researchers use by adding an additional R program and another Python program

## Independent Study in Job Searching Platforms (Unpaid)

August 2022-December 2022

Completed under Professor Philipp Kircher and Professor Michele Belot, Cornell University, Ithaca, NY

- Analyzed the following research question: How can algorithmic fairness be implemented in a job searching platform?
- Performed a literature review for recent developments in algorithmic fairness research
- Developed Python programs to construct a “toy algorithm” to attempt implementation of various algorithmic fairness principles discovered in literature review
- Conducted weekly presentations of updates to panel of professors, a graduate student, and a research associate

## Directed Reading Program – Nonstandard Analysis Applications in Economics (Unpaid) September 2022-December 2022

- Completed a reading and discussion on nonstandard analysis and its economic applications based on Robert Goldblatt’s ‘Lectures on the Hyperreals: An Introduction to Nonstandard Analysis,’ under the guidance of a mathematics PhD student
- Presented a lecture on the construction of the hyperreals and their usage in microeconomic theory to a panel of undergraduate and graduate students, as well as faculty

## PROJECTS

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### Crawler/Web-Scraping

- Developed various programs in Python that use web-scraping methods to generate datasets from online sources
  - Example I: Produces Excel spreadsheet from Top 100 Movies data taken from RottenTomatoes.com
  - Example II: Generates data frame from weather data taken from the National Weather Service

### Machine Learning & Data Analysis

- Programmed algorithm that utilizes the Scikit-learn Python package to predict the probability of a movie being rated ‘Adult’ using data taken from IMDb
- Machine learning methods used include logistic regression and decision trees
- Created STATA programs that use statistical methods, including multivariate linear regression, logit/probit regression, difference-in-differences, Lasso/Ridge regressions, among others

## SKILLS

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- Computer: Microsoft Office, Excel, LaTeX, GitHub/Bitbucket, Docker, Python, STATA, R, MATLAB (MathWorks certification), HTML/CSS, JavaScript, SQL, CISER, BioHPC, Github Codespaces, CodeOcean
- Knowledgeable in machine learning and data analysis algorithms in Python, including Scikit-learn, Pandas, and NumPy
- Language: Native in English & Spanish, advanced in German and Portuguese, beginner in Swedish, French, and Armenian

## LEADERSHIP EXPERIENCE & ACTIVITIES

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### Editor-in-Chief

May 2022-May 2023

*Cornell Undergraduate Economic Review*, Cornell University, Ithaca, NY

- Managed proof-reading and editing of submitted articles from undergraduates at Cornell and peer institutions (MIT, Duke, UCL, NYU, Northwestern, Harvard, and many others)
- Selected, compiled, marketed, and distributed finalized Fall/Spring editions of the journal

### Referee

October 2021-May 2022

*Cornell Undergraduate Economic Review*, Cornell University, Ithaca, NY

- Reviewed and provided feedback on peer-submitted economic research articles
- Assisted in the selection of articles to be published by the journal

## PUBLICATIONS

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### Submitted (Peer-Reviewed)

Aradillas Fernández, Andrés, José Luis Montiel Olea, Chen Qiu, Jörg Stoye, Serdil Tinda. “Robust Bayes Treatment Choice with Partial Identification.” 2024. <https://arxiv.org/abs/2408.11621>.

### Working Papers

Aradillas Fernández, Andrés, José Blanchett, José Luis Montiel Olea, Chen Qiu, Jörg Stoye, Lezhi Tan. “Epsilon-Minimax Solutions of Statistical Decision Problems.” 2024.

### Cases (Non-Peer-Reviewed)

Cohen, Lauren, Andres Aradillas Fernandez, and Grace Headinger. "For God, Family & Steel: Lerman Enterprises." Harvard Business School Case 823-100, March 2024.

### Articles

Andres Aradillas Fernandez, Martin Hiti, and Asani Sarkar, “Are Nonbank Financial Institutions Systemic?” Federal Reserve Bank of New York *Liberty Street Economics*, October 1, 2024, <https://libertystreeteconomics.newyorkfed.org/2024/10/are-nonbank-financial-institutions-systemic/>.