

# Edward Gilligan

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## Candidate Summary

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I am a fourth-year student at the University of Virginia, pursuing Economics and Classics with a minor in Mathematics. My research interests focus on Industrial Organization, Game Theory, and Experimental Economics, though I am eager to explore additional fields. I plan to apply to PhD programs in Economics in the future.

## Education

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### University of Virginia

August 2023 – May 2026

Bachelor of Arts: *Economics, Classics (Greek)*

Minor: *Mathematics*

- GPA: 3.67/4.0;
- **Relevant Coursework:** Industrial Organization, Game Theory, Experimental Economics, Labor Economics, Introduction to Econometrics, Differential Equations and Dynamical Systems (proof based; existence and uniqueness), Elementary Linear Algebra, Basic Real Analysis, Calculus-Based Probability, Abstract Algebra
- College of Arts and Sciences Dean's List: Spring 2024, Fall 2024, Spring 2025, Fall 2025

### Binghamton University (Transferred)

August 2022 – May 2023

- GPA: 3.88/4.0
- College of Arts and Sciences Dean's List: Fall 2022, Spring 2023.

## Experience

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### Research Assistant

Charlottesville, VA

University of Virginia, Department of Economics

April 2025 – Present

Supervisor: Assistant Prof. Po-Hsuan Lin

- Actively contribute to weekly research meetings by advancing literature reviews, refining project framing, and shaping methodological approaches in behavioral and experimental economics.
- Deliver rigorous analytical feedback on working papers and presentations, critically evaluating empirical results and theoretical frameworks.
- Drive project development by proposing research ideas and synthesizing empirical literature to inform study design and execution.

## Projects

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### Econometric Paper

- Led an original empirical analysis of online sports betting legalization, estimating its effects on county-level bankruptcy filings and mortgage delinquency rates, with separate identification of loans 89 days or less and 90 days or more delinquent.
- Built and harmonized large-scale panel datasets from the U.S. Census Bureau, the Federal Reserve, and other public sources; cleaned, merged, and structured data using Stata and Python (pandas) for econometric analysis.
- Designed and implemented a Fixed Effects Counterfactual Estimator in Stata to identify causal effects while controlling for temporal dynamics and cross-county heterogeneity.
- Synthesized empirical results within an economic and policy framework to evaluate the local financial and social consequences of sports betting legalization.

### Basic Experimental oTree Game

- Developed an oTree-based behavioral simulation in Python to model stochastic betting behavior, mortgage repayment, and bankruptcy dynamics across repeated experimental rounds.

- Engineered dynamic state-update mechanisms that adjust player variables in response to probabilistic bet outcomes and binding financial constraints.
- Designed custom oTree models and parameterized constants to ensure reproducible, modular, and controlled simulation of financial decision-making processes.

### **Estimating Demand and Market Outcomes of Oatmeal (In Progress)**

- Implemented a logit demand model using the Dominick's supermarket scanner dataset, estimating own- and cross-price elasticities with clustered standard errors at the store-week level.
- Constructed large-scale panel datasets and executed multiple model specifications, recovering marginal costs and computing product- and market-level elasticities.
- Designed and simulated a range of counterfactual market scenarios—including uniform and targeted price changes, package size adjustments, and elasticity-based pricing rules—to evaluate impacts on market shares, revenues, quantities, and consumer welfare.
- Quantified welfare effects using log-sum measures and produced publication-ready tables and figures via automated LaTeX and graphical exports.

### **Matrix Inverse, Determinant, and Echelon Form Calculator**

- Developed a Python program that enables users to input the dimensions and entries of an arbitrary matrix and automatically computes the matrix's inverse, determinant, and reduced row echelon form. The program supports both  $n \times n$  and  $m \times n$  matrices, incorporates input validation, and utilizes fundamental linear algebra algorithms implemented through NumPy and symbolic operations.

## **Skills**

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**Languages and Tools:** Python (Intermediate), Stata (Intermediate), oTree, HTML (Advanced), R (Basic), MatLab (Basic), Tableau (Basic), SQL (Basic), LaTeX, MS Office Applications (Excel, Word, Powerpoint)

## **References**

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- Assistant Professor Po-Hsuan Lin  
Department of Economics, University of Virginia  
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University of Virginia Department of Economics Phone Number: (434)-924-3177  
Relation: Research Assistant for
- Professor Federico Ciliberto  
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Relation: Professor
- Professor Coulter George  
Department of Classics, University of Virginia  
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University of Virginia Department of Classics Phone Number: (434)-924-3008  
Relation: Advisor, Professor

## **Other Work Experience**

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### **Soccer Official**

*Piedmont Valley Soccer Officials Association*

*Charlottesville, VA*

*March 2024 – Present*

- Refereed high school soccer games in the greater Piedmont Valley Area.

### **Assistant Facilities Supervisor**

*University of Virginia: Department of Recreation*

*Charlottesville, VA*

*August 2025 – Present*

- Provided front desk support and customer service at one of the university's recreation centers.