

# Mariam Arzumanyan (She/Her/Hers)

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## PROFESSIONAL SUMMARY

Ph.D. in Economics with over five years of experience gathering, analyzing, and forecasting data using scripting languages (SQL, Python, R). My projects include quasi-experimental design methods utilizing statistical, econometric, and machine learning models to draw causal inferences from observational data and simulations. My theoretical research includes dynamic programming applications for game theoretical models.

## SKILLS

- Causal Inference
- Machine Learning
- Python Programming
- SQL/Database Skills
- R/GitHub/LaTeX
- Data Analytics Skills
- Econometric Modeling
- Markov, Statistical Learning
- Presentation Skills
- Collaboration Skills

## EXPERIENCE

### **Analytical and Problem-Solving Expertise, August 2016 – Current**

#### **Gained As a Graduate Researcher/RA at University of Illinois, Urbana-Champaign, IL**

- Formulated research agenda to estimate the impact of treatment from observational data using quasi-experimental design methods. Examples are propensity score weighting, difference-in-differences framework, regression discontinuity design, and instrumental variables.
- Employed machine learning techniques such as logistic regression, classification-and-regression trees, boosting, regularization, and singular value decomposition to enhance the accuracy of baseline models.
- Implemented supervised document classification models for binary and multiclass classification problems.
- Ability to present scientific data and concepts with proficiency in developing polished visualizations, as evidenced by presenting results orally and writing at conferences and seminars to audiences ranging from 5 to 50+.

### **Communication and Leadership Expertise, August 2017 - Current**

#### **Gained As an Instructor/TA at University of Illinois, Urbana-Champaign, IL**

- Administrative support skills with in-depth knowledge of Applied Mathematics as evidenced by giving a series of lectures to first-year Economics Ph.D. students.
- Experience guiding junior team members demonstrated by supervising 40+ undergraduate students each semester in technical reports, final projects, graded exams, and weekly assignments.
- Ability to exceed expectations with expertise in platform optimization as evidenced by excellent student evaluation scores and receiving multiple teaching awards for outstanding ranking by students.
- Volunteer and non-profit leadership expertise gained as Treasurer for Economics Graduate Student Organization and by co-facilitating “Women in Economics” meetings, planning activities, and events.

**Economist Researcher, May 2013 – August 2016**  
**Central Bank of Armenia, Yerevan, Armenia**

- Conducted broad-based economic research and prepared articles, digests, and reports for management and specialty publications.
- Translated economic evidence-based findings into comprehensible narrative to communicate policy and project development.
- Supported thought-leadership topics to facilitate dialogue with policymakers and shape outcomes.
- Incorporated strong quantitative and qualitative analytical skills to conduct ad hoc analysis to identify and forecast trends.

## **EDUCATION**

**Ph.D. in Economics**, University of Illinois at Urbana-Champaign, Expected May 2023

**Master of Science in Economics**, University of Illinois at Urbana-Champaign, May 2019

**Master's Degree in Mathematics**, Yerevan State University, July 2015

**Bachelor of Science in Mathematics**, Yerevan State University, June 2013

## **CERTIFICATES**

Data Scientist with Python Track, DataCamp, Online Learning, May 2021

Machine Learning, Cornell University, eCornell, November 2020

Macroeconomic Forecasting, IMFx, Online Learning, January 2016

Financial Programming and Policies, Part 1, IMFx, Online Learning, September 2015

Financial Programming and Policies, Part 2, IMFx, Online Learning, December 2015

## **SCHOLARSHIPS AND AWARDS**

Excellence in Graduate Teaching, EGSO Award, UIUC, 2019-2020

Teacher Ranked as Excellent, CITL, UIUC, 2018-2020

Robert C. Demarest Memorial Teaching Award, UIUC, 2020

Distinguished Employee Award, Central Bank of Armenia, 2016

Best Paper Award, Armenian Economic Association Annual Conference, 2016

Scholarship for Excellence in Graduate Studies, Yerevan State University, 2013-2015

Republic of Armenia Scholarship for Excellence in Graduate Studies, 2013-2015

Scholarship for Excellence in Undergraduate Studies, Yerevan State University, 2009-2013

Republic of Armenia Scholarship for Excellence in Undergraduate Studies, 2009-2013

## **RESEARCH PAPERS AND PUBLICATIONS**

“New Jersey Police Use of Force: When, Why, and How?”, Working Paper, 2022

“Explaining Political Polarization in Two-Party Elections with Utilitarian Approach”, 2022

“The Dynamic Effect of Extremist Parties on Voter Turnout: Utilitarian Approach”, 2019

“Costly Voting with Multiple Candidates Under Plurality Rule”, 2017, Games and Economics Behavior, co-author M.K. Polborn

## **References**

**Professor Stefan Krasa, Thesis Chair, Director of Research**

**Professor Mark Daniel Bernhardt, Thesis Committee Member**