Selina Carter

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[LinkedIn](#)   Pittsburgh, PA

Summary

Statistics PhD student focusing on uncertainty quantification for reinforcement learning, time series forecasting, and applications to nuclear fusion and natural disaster management.

- Previously worked in international development (Mozambique, Ecuador, Turkey); Returned Peace Corps Volunteer.
- Asks questions, believes in teamwork; flexible, determined, and has a sense of humor.

Education

Carnegie Mellon University   2021-present

PhD candidate, Statistics (planning to pursue joint PhD degree in Machine Learning)   GPA: 3.91/4.0

> Gold Star Distinction on the data analysis exam (May 2022), awarded to 2/15 first-year PhD students
> Member of Theoretical Statistics and Machine Learning Reading Group
> Student leader for AI Institute for Societal Decision Making
> Instructor, 36-226 ("Intro to Statistical Inference") in summer 2023

Georgetown University   2016-2019

MS, Mathematics and Statistics   GPA: 3.97/4.0
Teaching Assistant: graded homework and held office hours for four graduate courses:

> "Probability Theory" (MATH-501); "Mathematical Statistics" (MATH-503)
> "Numerical Methods" (MATH-504); "Stochastic Simulation" (MATH-611)

The Maxwell School of Citizenship and Public Affairs, Syracuse University   2009-2013

MA-Economics, MA-Public Administration, MA-International Relations   GPA: 3.96/4.0
• Maxwell School Marshal, 2013 Commencement & Academic Achievement Award for highest academic performance
• Economics Master's Thesis: "Financial Intermediation, Growth, and Microfinance in Turkey: A Quantitative Study" [link]

Dickinson College   2002-2006

BA, *Summa Cum Laude*, International Studies (Honors) and Spanish   GPA: 3.94/4.0

Current research projects

• Disaster management using uncertainty quantification in reinforcement learning (AI Institute for Societal Decision Making at CMU)
• Simulations using averaged stochastic gradient descent for hull-based confidence regions (with Arun Kuchibhotla)
• Time series forecasting and online prediction (with Arun Kuchibhotla)
• Modeling COVID-19 testing rates by occupation using Delphi Group data (with Alex Reinhart and Robin Mejia)

Conferences

• *Will AI Accelerate the Intra-Firm Digital Divide? Evidence from a Field Experiment on How Managers use Explainable AI* (Presented by co-author Jonathan Hersh)
  ◦ MIT Conference on Digital Experimentation (CODE) (11/10/2023)
  ◦ Wharton/Columbia Management, Analytics and Data (MAD) (5/19/2023)
  ◦ USC Artificial Intelligence in Management, AIM 2023 (3/16/2023) – Best PhD Student Paper Award
  ◦ Statistical Challenges in E-Commerce Research (6/2022)
  ◦ Global Conference on Innovations in Management and Business (2021)
  ◦ INFORMS Conference on Information Systems & Technology (CIST) (2020)
• *Predicting Delays at the Inter-American Development Bank Using R.* R-Gov Conference (Lander Analytics and Georgetown University). [recording] (12/2020)
• *How Are Ideas Spread at Your Organization? Analyze Its Citation Network.* R-Gov Conference (Lander Analytics and Georgetown University). [recording] (11/2019)
• *The IDB Loan Network: Assessing the Role of Impact Evaluations.* Sunbelt 2019 (International Network for Social Network Analysis, Montreal). (6/2019)

Publications

- *(Pre-print)* Meyer, M.J., Carter, S., Mordukhovich, I., McNeely, E., Malloy, E.J. Longitudinal Distributed Lag Models for Environmental Exposure Crossover Trials." [ArXiv]

- *(Pre-print)* Hersh J., Carter S. "Do Managers Trust Algorithms for High Stakes Decisions? A Machine Learning Decision Support Tool for Estimating Delays in Multi-Million Dollar Loans." [link]

Awards

- Best PhD Student Paper Award (USC Marshall School of Business AIM 2023)
- Gold Star Distinction on first-year data analysis exam, Statistics Department, Carnegie Mellon University (May 2022)
- Maxwell School Marshal, 2013 Commencement & Academic Achievement Award for highest academic performance
- David L. Boren Fellowship, Turkey (U.S. National Security Education Program, $22,500, 2012)
- Critical Language Scholar, Turkey (U.S. Department of State, 2010)
- Foreign Language and Area Studies Fellow (U.S. Department of Education, full academic tuition and $15,000 stipend, 2010)
- Best Student Award for highest GPA, International Relations MA Program, Maxwell School (2011)
- Fulbright Scholar, Portugal (2008-2009)
- Benjamin Rush Scholar ($50,000 tuition merit-based scholarship), Phi Beta Kappa, Model United Nations Team Secretary, Margaret McAlpin Ramos Award (Spanish Department), Dickinson College (2002-2006).

Coding and software

- R, Python, SQL, Tableau, ArcGIS, SurveyCTO/ODK

Industry Experience

Data Scientist, Inter-American Development Bank – Washington, D.C.   Feb 2018-Aug 2020

Vice Presidency for Countries

- Wrote winning proposal for internal competition on using machine learning to increase Bank's efficiency; implemented $120,000 effort to predict delays in Bank projects; managed team of four data scientists plus an external PhD economist.
- Created interactive reports using Tableau, text mining analysis of loan proposals, and network analyses of loans.
- Voluntarily organized data science events, such as a 7-week training on machine learning through the Bank's "Analytics Network."

Business Intelligence Consultant, Inter-American Development Bank – Washington, D.C.   Nov 2015-Feb 2018

Office of Strategic Planning and Development Effectiveness

- Supported management strategy with quantitative analyses such as predictive models for monthly disbursements, bank response time to natural disasters, and factors affecting portfolio quality.

Data Science Instructor, Data Society – Washington, D.C.   Jan-March 2020

Instructor for the following 5-day onsite trainings:

- Institute for Defense Analysis. "Intro to R, Intro to Classification, and Advanced Classification." (January 2020)
- State Department, Foreign Service Institute. "Intro to R Programming, Visualizations, and Classification." (March 2020)

Research Associate, Jameel Poverty Action Lab - Nampula, Mozambique   Feb 2014-Aug 2015

mVacciNation was a randomized control trial testing the impact of a mobile phone application on child vaccination rates; funded by USAID, GAVI Alliance, and Vodafone. All work conducted in Portuguese.

- Trained and led a team of 15 Mozambican enumerators to conduct household surveys in Nampula Province (156 health facilities, 2,560 households); drove 4x4 vehicle to transport team through isolated rural regions to conduct interviews with villagers.

Financial Director, Development and Statistical Officer - Ankara, Turkey   May 2012-Oct 2013

Turkish Grameen Microfinance Program

- Loan portfolio management (U.S. $20 million): spearheaded management action on lowering borrower defaults; used data and interviews to redesign borrower repayment system. All work conducted in Turkish.

David L. Boren Fellow – Ankara, Turkey   Jan-Dec 2012

U.S. National Security Education Program grant for advanced Turkish language study

- Lived with a host family; received intensive language training (20 hours/week); completed graduate coursework (in Turkish) at Ankara University economics department; researched Turkish economic development policy in the banking sector and microfinance (culminating in MA-economics thesis).

Fulbright Scholar – Lisbon, Portugal   Oct 2008-June 2009

   English Teaching Assistant and student of Portuguese language at the University of Lisbon; launched a theater group and directed a one-act play aimed at rethinking stereotypes of America.

U.S. Peace Corps Volunteer – El Cambio, Ecuador   June 2006-Aug 2008

   Trained staff at the National Institute of Children and Families on HIV/AIDS education; helped form a youth group on reproductive health; led after-school activities for beneficiaries of conditional cash transfer program; established a village cultural center.

Foreign Languages

Turkish, Advanced; Diploma from TÖMER language institute
Spanish, Superior (Tested via the Guidelines of the American Council for the Teaching of Foreign Languages)
Portuguese, Advanced

Personal Interests

• Painting and illustrating (Instagram: selina.carter.art), running, pickup soccer, history books (currently Spanish conquistadors and Andrew Carnegie biography), Star Trek original series.