

## Education

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Massachusetts Institute of Technology 2017 - present  
Ph.D., Social and Engineering Systems

College of William & Mary 2007 - 2011  
B.S., Mathematics and International Relations  
*Summa cum laude*

- Exchange student at the University of Münster in Germany

## Research

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William & Mary International Relations (ITPIR) — Project Manager 2011 - 2012

- Managed two international surveys (n ~ 10,000) for a project on the foreign policy opinions of academics and senior policymakers.
- Supervisor: Michael Tierney

William & Mary International Relations (ITPIR) — Research Assistant 2009 - 2011

- RA in a research group on data-driven approaches to foreign aid (now called AidData). Work included collection and data munging of foreign aid information.
- Supervisor: Michael Tierney

## Teaching

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College of William & Mary — Teaching Assistant 2009

- Taught a weekly recitation section for German 101.

## Awards and Grants

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- **Phi Beta Kappa.** College of William & Mary, 2010.
- **Elsa Diduk Fellowship.** College of William & Mary, 2010. Support for exchange students in Germany (\$2,700).
- **Monroe Scholar.** College of William & Mary, 2008. Awarded to top ~7% of class; \$3,000 of summer research support.
- **Word Power Challenge, 1st Place.** Reader's Digest, 2007 - 2011. Competition prize of \$25,000 scholarship for college.

## Service and Volunteer

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Monitor Journal of International Studies — Publicity Director 2009

- Publicized William & Mary's semi-annual, student-run international relations journal and solicited paper submissions.

## Professional Experience

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**Democratic National Committee** — Data Scientist 2015 - 2017

- Led DNC Data Science work on fundraising analytics, including developing research agendas and designing/analyzing experiments.
- Built a scalable Docker-based model production infrastructure, with a custom sklearn-based framework for scoring and Amazon ECS for deployment. The new infra enabled automatic refreshing of all DNC scores, a program first.

**Hillary for America** — Data Scientist 2016

- Voter and donor modeling, data infra engineering, and experiment analysis.
- Wrote a strategy white paper on voter contact in the fall campaign based on analysis of several large-scale voter turnout and persuasion experiments.

**Analyst Institute** — Director of Analytics 2013 - 2015

- Managed a team of five analysts in implementing and analyzing 100+ political field experiments, and building statistical models of experimental treatment responsiveness.

**Democratic Senatorial Campaign Committee** — Analytics Manager 2013 - 2013

- Digital fundraising analytics: experiments, predictive modeling, reporting and QC processes.

**Presidential Inaugural Committee** — Lead Digital Analyst 2012 - 2013

- Digital analytics for the official inaugural committee.

**Obama for America** — Deputy Data Director / Associate Analyst 2012

- Data infra engineering and report development for digital analytics; analysis of early voting in Ohio.

## Software Projects

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- **Ado** (2015 - present). Open-source Stata interpreter (in R / C++), including a Stata parser and command implementations. Currently in alpha. ([Link](#)).
- **sqlscore** (2016 - present). R utilities for database-backed scoring of generalized linear models ([Link](#)).
- **schemeR** (2016 - present). A Lisp-like mini-language for R, including support for macros ([Link](#)).

## Technical Skills

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- **Languages:** Python, R, C/C++, SQL, bash, Stata,  $\LaTeX$ , HTML, CSS
- **Frameworks:** SciPy stack, sklearn, Jupyter
- **Databases:** MySQL, PostgreSQL, Vertica, MS SQL Server
- **Automation:** Docker, Travis, AWS CodeBuild / CodePipeline, AWS ECS
- **Tools:** git, subversion, flex, bison

## Languages

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- **English** (native)
- **German** (fluent)