

PETER SHAFFERY

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EDUCATION

University of Colorado Boulder
PhD, Applied Mathematics
University of Massachusetts, Lowell
BSc, Physics and Mathematics

Sept 2015 - Aug 2020
Graduating GPA: 3.7
Sept 2009-May 2014
Graduating GPA: 3.5

WORK EXPERIENCE

Data Scientist

Oct 2020-

University of Colorado Boulder, Boulder, CO

- Performed advanced analytics on marketing, recruitment, and retention data
- Built and validated cross-team data resources including novel datasets and recruitment dashboards
- Developed, tested, and documented ETL code in Python and SQL

Instructor

Jan 2021-April 2021

University of Colorado Boulder, Boulder, CO

- Instructor of record for mixed undergrad/grad course "Advanced Statistical Modeling", covering advanced regression theory and generalized linear models
- Updated existing course material to cover modern R paradigms such as tidyverse and ggplot2
- Created 4 new weeks of course material covering introductory Bayesian statistics and causal modeling

Graduate Research Assistant

Sept 2015-Aug 2020

University of Colorado Boulder, Boulder, CO

- Developed and analyzed a random matrix model to explain phenomena at the intersection of ecology and epidemiology
- Applied stochastic process models within a computational Bayesian framework to analyze insect movement in an agricultural context
- Developed variant of Hamiltonian Monte Carlo for computationally expensive Bayesian models
- Published and presented at Society of Industrial and Advanced Mathematics (both General and Regional conferences)
- Worked with CU Boulder Office of Data Analytics to forecast graduation rates and tuition revenue, using Bayesian survival models.

Graduate Teaching Assistant

Sept 2015-May 2020

University of Colorado Boulder, Boulder, CO

- Assisted for Calculus 1-3, Differential Equations, Psychological Statistics, and Bayesian Statistics and Computing.
- Additionally taught optional computer lab courses accompanying Calculus 3 and Differential Equations, introducing students to Mathematica and MATLAB

Intern

Jan 2019 - Jan 2020

National Renewable Energy Laboratory, 15013 Denver W Pkwy, Golden, CO 80401

- Used Bayesian time series methods to estimate solar power generation occurring “behind-the-meter”
- Proposals improved model error over other state-of-the-art methods by as much as 50%
- Drafted “research road-map” for behind-the-meter energy usage and generation projects
- Contributed code and methods to a project using high resolution, fisheye cameras (“Total Sky Imagers”) to estimate and forecast local solar resources.

TECHNICAL STRENGTHS

Software & Tools	Linux, Jupyter, Git, RStudio
Languages	Python (strong), R (strong), SQL (intermediate), Go (novice)

PUBLICATIONS

Automated Construction of Clear-Sky Dictionary from All Sky Imager Data

Shaffery, Habte, Netto, Andreas, and Krishnan

Solar Energy, Dec 2020

Bayesian Structural Time Series for Behind-the-Meter Photovoltaic Disaggregation

Shaffery, Yang, and Zhang

Innovative Smart Grid Technologies, Feb 2020

A Note on Species Richness and the Variance of Epidemic Severity

Shaffery, Elderd, and Dukic

Journal of Mathematical Biology, April 2020