PETER SHAFFERY

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EDUCATION

University of Colorado Boulder *Sept 2015 - Aug 2020*
PhD, Applied Mathematics Graduating GPA: 3.7
University of Massachusetts, Lowell *Sept 2009-May 2014*
BSc, Physics and Mathematics Graduating GPA: 3.5

WORK EXPERIENCE

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 Differental 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 LaTeX, Linux, MATLAB, Mathematica, Git, Jupyter
Languages Python (strong), R (strong), Stan (strong), SQL (intermediate), Go (novice)

PUBLICATIONS

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

Automated Construction of Clear-Sky Dictionary from All Sky Imager Data
Shaffery, Habte, Netto, Andreas, and Krishnan
Solar Energy, accepted