

Scott T. Watson, PhD

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EDUCATION

- Doctor of Philosophy in Physics* May 2018
George Mason University, Fairfax, VA
- Master of Science in Applied and Engineering Physics* January 2012
George Mason University, Fairfax, VA
- Bachelor of Science in Physics* May 2009
The College of William and Mary, Williamsburg, VA

WORK EXPERIENCE

- Data Scientist* June 2019 – Current
Veracity Forecasting Group, Systems Planning and Analysis, Inc.
- Tasks included using Python and R for large-data processing, advanced modeling, and robust analysis to provide forecasts and data-driven decision support for customer challenges.
 - Helped build a from-scratch streaming data analysis platform through agile-style processes for aligning, merging, and processing multiple human-generated and machine-generated data sources.
 - Introduced to project team neural network-based natural language processing tools for extracting vital information from free-text data.
 - Utilized advanced parallel programming, SQL, and NoSQL techniques to improve the throughput and storage of large data sources necessary for analysis results.
- Full-Stack Webmaster* Summer 2017 – Summer 2018
Department of Physics and Astronomy
George Mason University
- Re-designed department website in accordance with university style guidelines
 - Created backend with WordPress/PHP/SQL, and mobile-friendly frontend

RESEARCH EXPERIENCE

- Graduate Research Assistant* Spring 2012 – Spring 2018
Department of Physics and Astronomy
George Mason University, Fairfax, VA
Advisors: Dr. Paul So, Dr. Ernest Barreto
- Researched nonlinear properties of complex, high-dimensional network of coupled oscillators
 - Created large, parallel simulations of the system in Python, with integration of legacy code libraries
 - Performed computational and statistical analysis of system properties on generated data sets
 - Applied and extended mathematical theories to explain and compare with computational results
- Graduate Research Assistant* Spring 2011 – Winter 2012
Department of Physics and Astronomy
George Mason University, Fairfax, VA
Advisor: Dr. Karen Sauer
- Helped characterize one of the country's most sensitive magnetometers
 - Analyzed quantum optical interactions with materials, including property detection
- Undergraduate Research Assistant* Fall 2008 – Spring 2009
Department of Physics
The College of William and Mary, Williamsburg, VA
Advisor: Dr. Mark Hinders
- Helped characterize and integrate sensor for robot utilizing multi-sensor fusion
 - Analyzed nonlinear acoustic properties of a directional loudspeaker for integration

This resume is current as of December 2021

TEACHING EXPERIENCE

Professor

Fall 2018, Spring 2019

Department of Computational and Data Sciences
George Mason University, Fairfax, VA

- Taught 200-level course to prospective data science majors
- Used Python to introduce concepts such as Monte Carlo methods, simulations, text mining, and statistics

Professor

Spring 2019

Department of Physics and Astronomy
George Mason University, Fairfax, VA

- Taught 200-level discussion-oriented course for large lecture in Electricity and Magnetism for sophomores
- In small classroom setting, lead discussions on core concepts of non-intuitive topics to help students better understand the subject

PUBLICATIONS

S. Watson, E. Barreto, B. Cotton, P. So. "Consequence of Symmetry Breaking in Two Coupled Kuramoto Networks".
(*In preparation*)

THESES

S. Watson. "Exploring Collective Dynamics of Networks: Limits of the Ott-Antonsen Approach". PhD thesis, George Mason University, May 2018.

S. Watson. "Robotic Multi-Sensor Fusion". Undergraduate thesis, The College of William and Mary, May 2009.

PRESENTATIONS

S. Watson, E. Barreto, B. Cotton, P. So. "Symmetry Breaking in a Network of Networks". Poster presented at Advances in Discrete Networks; December 12-14, 2014; Pittsburgh, PA.

S. Watson, E. Barreto, B. Cotton, P. So. "Symmetry Breaking in a Network of Networks". Talk presented at 2015 SIAM Conference on Applications of Dynamical Systems; May 17-21, 2015; Snowbird, UT.

AWARDS/COMMENDATIONS

SPA Joint, Land, Air, and Space Division (JD) Outstanding Service Award (OSA) Winner – March 2020