John Darges

CONTACT INFORMATION

North Carolina State University
Department of Mathematics
Language & Computer Labs 202
Raleigh, NC 27607 USA

Email: jedarges@ncsu.edu
GitHub: github.com/jedarges
Website: jedarges.github.io

CITIZENSHIP

US Citizen

INTERESTS

Uncertainty quantification, sensitivity analysis, inverse problems, Bayesian inference, surrogate-assisted methods, machine learning, dimension reduction

EDUCATION

North Carolina State University, Raleigh, NC, USA

Ph.D., Mathematics, Expected 2023

Co-advisors: Alen Alexanderian and Pierre Gremaud

M.S., Mathematics 2020

University of North Carolina, Chapel Hill, NC, USA

B.S., Mathematics, 2017

B.A., Chemistry, 2017

TEACHING

Department of Mathematics, North Carolina State University, Raleigh, NC, USA

Graduate Instructor: MA 511 (Advanced Calculus I) **Fall 2020**

Graduate Instructor: MA 241 (Calculus II) **Summer 2020**

Teaching Assistant: MA 131 (Calculus for Life and Management Sciences A) **Spring 2020**

Teaching Assistant: MA 241 (Calculus II) **Fall 2019**

Department of Chemistry, University of North Carolina, Chapel Hill, NC, USA

Teaching Assistant: CHEM 101L (Introductory Chemistry Lab I) **May 2016 to June 2016**

EMPLOYMENT

Department of Mathematics, North Carolina State University, Raleigh, NC, USA

Research Assistant **Spring 2021 to Present**

Grader: MA 231H (Calculus for Life and Management Sciences B) **Spring 2019**

Grader: MA 351 (Discrete Mathematics) **Fall 2018**

Avioq, Inc., Durham, NC, USA

Contractor **February 2018 to August 2018**

Department of Chemistry, University of North Carolina, Chapel Hill, NC, USA

Undergraduate Researcher **August 2014 to May 2016**

Lab Technician **August 2013 to May 2014**

PUBLICATIONS

Extreme learning machines for variance-based global sensitivity analysis. John Darges, Alen Alexanderian, Pierre Gremaud. Submitted 2022.

PRESENTATIONS

Seminar Talk

Identifying important prior hyperparameters in Bayesian inverse problems with efficient variance-based global sensitivity analysis. North Carolina State University, Raleigh, NC, USA. Applied Mathematics Graduate Student Seminar. April 2023.

Poster Talk

Extreme learning machines for variance-based global sensitivity analysis. RAI Amsterdam Convention Center, Amsterdam, Netherlands. SIAM Conference on Computational Science and Engineering. March 2023.

Invited Talk

Extreme learning machines for variance-based global sensitivity analysis. Walter E. Washington Convention Center, Washington, D.C., USA. Joint Statistical Meetings. August 2022.

Poster Talk

Extreme learning machines for variance-based global sensitivity analysis. Florida State University, Tallahassee, FL, USA. Conference on Sensitivity Analysis of Model Output (SAMO). March 2022.

SERVICE ACTIVITIES

North Carolina Science Olympiad **2023**

Member of volunteer team running and scoring competition events

Association of Women in Mathematics **2022**

Volunteered at educational workshops to encourage and foster young women's interest in mathematical sciences

Math Doesn't Bug Me **2019**

Volunteered at mathematics outreach events by helping participants solve mathematics-related games and puzzles and explaining the mathematics involved

Alpha Chi Sigma **2015 to 2017**

Volunteered at science outreach events by demonstrating and helping participants conduct chemistry experiments. Provided tutoring services to primary school students

Centro Para Familias Hispanas **2012 to 2013**

Tutored students in elementary school level mathematics, science, and language arts

MEMBERSHIPS

Society for Industrial and Applied Mathematics (SIAM), American Mathematical Society (AMS), American Statistical Association (ASA)

SKILLS

Python, MATLAB, LaTeX

LANGUAGES

English, Spanish