

Nicole Brewer

RESEARCH SOFTWARE ENGINEER

Purdue University, West Lafayette, IN

✉ brewer36@purdue.edu | 🏠 nicole-brewer.com | 📧 nicole-brewer | 🌐 nicole-brewer | 🐦 catch_me_coding

Education

Purdue University

MATHEMATICS WITH COMPUTER SCIENCE

West Lafayette, IN

December 2018

Experience

Purdue University

RESEARCH SOFTWARE ENGINEER

West Lafayette, IN

Feb 2019 - Present

- Implemented a highly interactive, Jupyter-based, GUI wrapper for power analysis software in order to expand the audience and ease of use of a rich set of computational functions via a user-friendly interface.
- Facilitated software design, the implementation of best practices, and internal tool development, and lab documentation to improve the overall sustainability of lab software.
- Transform disparate data acquisition and processing scripts into modular classes to be reused for scientific workflows
- Designed a dynamic Solr schema to index and query layered geospatial and user-defined metadata
- Implemented interactions with this database in a web application in PHP and JavaScript

Aptiv

SOFTWARE VERIFICATION ENGINEER

West Lafayette, IN

Nov 2017 - Nov 2018

- Developed comprehensive Unit Test projects that utilized CAN bus protocol communications to verify automotive controller hardware.

Publications

1. O'Hara-Wild, M., & Hyndman, R. (2021). *Vitae: Curriculum vitae for r markdown*. <https://CRAN.R-project.org/package=vitae>
2. Müller, K., & Wickham, H. (2021). *Tibble: Simple data frames*. <https://CRAN.R-project.org/package=tibble>

Honors and Awards

Young Professional of the Year

AWARDED FOR NOTABLE ACHIEVEMENT IN THE ADVANCEMENT OF SCIENCE GATEWAYS

Gateways

2020

Travel Grant

TRAVEL SUPPORT TO ATTEND PEARC18 AND ATTEND THE STUDENT PROGRAM

XSEDE

2018

Phil Andrews Award

AWARDED FOR MOST TRANSFORMATIVE CONTRIBUTIONION TO PEARC2018

PEARC

2018

Conference Activity

Purdue's All-Women Student Cluster Competition Team

Supercomputing Conference

2018

- Assembled, administrated, and optimized a five-node cluster to run scientific and engineering applications under stringent power and time constraints

Selected Talks and Presentations

1. O'Hara-Wild, M., & Hyndman, R. (2021). *Vitae: Curriculum vitae for r markdown*. <https://CRAN.R-project.org/package=vitae>
2. Müller, K., & Wickham, H. (2021). *Tibble: Simple data frames*. <https://CRAN.R-project.org/package=tibble>

Teaching and Mentoring Experience

Object Oriented Programming

UNDERGRADUATE TEACHING ASSISTANT

Purdue University

Aug 2015 - May 2016

- Taught object oriented programming in Java, debugging in IntelliJ, JUnit Testing, and app development in Android Studio in laboratory

Mentors for Aspiring Girls in Computing

MENTOR

Purdue University

Aug 2018 - Dec 2018

- Led didactic activities at local middle and high schools in order to teach computer science concepts and improve the recruitment and retention of young women in technology careers

Research Experience

CSol Channels Scholar REU

CENTER FOR SCIENCE OF INFORMATION, NSF STC

2018

- Utilized HPC clusters to efficiently create large data sets pertaining to combinatorial game theory.
- Analyzed batching strategies of parallel computation to efficiently detect an unknown length of repeating sequences in long strings.
- Developed a command line interface and file management system in Python to prevent human error and enhance the usability of codebase upon inheritance.
- Created a data visualization to illuminate patterns and relationships among 5-dimensions for future work.

Training
