Zachary Billey

1313 232nd Pl SW
Bothell, WA 98021
206-799-4392
zbilley@gmail.com
Github: github.com/ZLBilley

PROFILE

Scientist with a background in computer modeling. Expertise in coding NumPy scripts to analyze large data sets and modify simulation codes in C++, fortran, and python. Background in plasma physics and running particle-in-cell simulation on HPC clusters, who is interested in a career in data science and is taking classes to widen my skillset. Adaptable and a quick learner who is looking for new challenges.

SKILLS

4 yrs. experience in Python, using NumPy and SciPy packages to analyze and perform noise reduction on large datasets as well as coding algorithms in fortran and modifying simulation code written in C++ Some experience with Mathematica and IDL. Some experience in C# Excellent math skills especially in vector calculus, linear algebra, and Fourier analysis. Experience running and modifying fluid and electromagnetic particle-in-cell simulation codes on supercomputing clusters employing parallel processing. Coursework in database-style database manipulation, using pandas and SQL

EDUCATION

PhD Plasma Physics Sept. 2010 - May 2017
University of Wisconsin Madison
Advisor: Prof. Ellen Zweibel

BS Physics Sept. 2003- May 2007
Linfield College

EXPERIENCE

Teaching/Research assistant - UW, Madison Sept. 2010- Aug. 2016
In collaboration with scientists at the Los Alamos National laboratory, I designed, ran, and analyzed large scale particle-in-cell simulations of collisionless magnetic reconnection using HPC clusters. I wrote NumPy scripts to reduce and analyze terabytes of data to test hypotheses on the behavior of plasmas, modified C++ simulation code, and wrote bash scripts to automate analysis jobs. I also shared my knowledge and expertise teaching discussion sessions and labs. Experienced at walking people through complex problems.

Crew Leader Assistant - US Census Bureau (Seattle District) 2009-2010
Helped manage a crew to conduct fieldwork and outreach during map verification and non-response follow up operations for the 2010 census.

Student Researcher - Linfield Research Insitute Summer 2006
Helped refurbish a donated high vacuum x-ray photoelectron spectroscopy machine

University of Idaho REU Summer 2005
Worked with high vacuum systems to manufacture iron nanoparticles

CERTIFICATIONS

Data Science Certificate Completed May 2018
University of Washington Continuing Education
Data science principles, statistics and machine learning primarily using Python, Pandas, and SciKitLearn