Bryce Fore, Ph.D.

BH4 bryce-fore

Education

2017 – 2021 **Ph.D. Physics, University of Washington Seattle** Nuclear Astrophysics
Thesis title: *Pions in Neutron-rich Matter: Implications for Neutron Stars and Supernovae*

2015 – 2017 **M.Sc. Physics, University of Washington Seattle**

2011 – 2015 **B.S. Physics, University of Illnois Urbana-Champaign**
Bachelor of Science in Physics with Highest Distinction
Minors in Computer Science and Mathematics

Employment

2022 – · · · · **Postdoctoral Fellow,** Argonne National Laboratory
Primary developer for neural network based method of computational analysis of nuclei which utilizes data-parallel high performance computing, written in Python-JAX

2019 **Summer Intern,** Los Alamos National Lab, XCP Computational Physics Workshop
Developed supervised and unsupervised machine learning techniques for analyzing shock ejecta using the Keras API for TensorFlow in Python

2017 – 2021 **Research Assistant,** University of Washington Seattle
Mathematical and computational analysis of pions and neutrinos in hot and dense matter

Skills

Machine Learning	Tensorflow, JAX, Keras, Scikit-Learn, deep reinforcement learning, unsupervised learning, deep supervised learning, graph networks
Programming languages	Python (Advanced), C++, Java, Mathematica, LaTeX, Unix shell
Programming	Numpy, Pandas, Matplotlib, Scipy, Object-Oriented Programming (OOP), Version control (git, github)
High performance computing	Multinode supercomputing, GPU acceleration, parallel computing, Slurm, PBS Pro
Mathematics	Probability & Statistics, linear algebra, multivariable calculus, numerical methods, discrete mathematics, Project Euler challenges: 301 problems completed (top 0.103% of users)
Soft skills	Extensive experience presenting complex concepts to diverse audiences, strong written and verbal communication skills, collaborative code development

Awards, achievements, and certifications

2023 **Argonne Outstanding Postdoctoral Performance Award**, presented to 10 Argonne postdocs in 2023

2015 – 2020 **NSF Graduate Research Fellowship**, Fellow, $\sim 16\%$ acceptance rate

2020 **Deep Learning Specialization**. Coursera, DeepLearning.ai

2018 **Machine Learning Specialization**. Coursera, Stanford University

2020, 2021 **Google Hash Code - Team coding competition**, team finished 623 in 2020 and 1807th in 2021 out of ∼10,000 teams

2012, 2014 **Mechmania - Game A.I. hackathon**, 3rd place (2012) and 2nd place (2014) team