

Peter Schwartz

2411 Talbott Way
Powell, TN 37849

peterdschwartz83@gmail.com
(615)804-8322

Education

- **University of Tennessee - Knoxville**
• *Masters of Science in Physics; GPA: 3.93* *Aug 2014 – Aug. 2018*
 - Key Courses: Biologically-Inspired Computation, Scientific Computation, Numerical Mathematics, Mathematical Methods in Physics, Statistical Mechanics, Quantum Field Theory, Special Topics in Nuclear Physics
- **Middle Tennessee State University**
• *Bachelors of Science (Honors)* *Aug 2010 – May 2014*
 - Majors: Physics
 - Minor: Mathematics and Biology

Experience

- *Post-Master's Research Associate* *August 2019 – August 2020*
 - Implemented multi-GPU acceleration in the E3SM Land Model using OpenACC and offline land model test-bed
 - Improved on and developed tools to analyze each subroutine to port them to the GPU and generate a unit-testing apparatus as needed
 - Attended SuperComputing 2019 for workshop on directive based programming and presented a few preliminary results and co-authored conference paper.
- *Graduate Research Assistant* *Aug. 2015 – May 2018*
 - Developed code in MPI and OpenMP environment to calculate properties of infinite nuclear matter and study characteristics of the strong nuclear force
 - Performed Bayesian analysis in Python to assess modeling errors based on effective field theory
 - Started using artificial neural networks for multivariate regression of key parameters of the model, using Keras with Tensorflow backend in Python
 - Presented two talks at annual low-energy nuclear theory get-together at ORNL
 - Published research in Physical Review C – Phys. Rev. C 97, 024332 (2018)
- *National Nuclear Physics Summer School* *July 2016 – August 2016*
 - Attended MIT for two week intensive summer school, covering latest developments in nuclear physics, and promoting collaboration between research groups
- *Graduate Teaching Assistant* *Aug 2014 – May. 2015*
 - Taught and led undergraduate labs in introductory physics and astronomy
- *Science Undergraduate Laboratory Internship* *June 2013 – Aug. 2013*
 - Interned at SLAC National Laboratory for nine weeks, involved in different tasks such as analysis of experiment data to determine noise properties of the detector and helping to set-up a couple of experiments
 - Analyzed C-SPAD detector data from x-ray pump probe and diffraction patterns in MATLAB
 - Presented results at end of the internship to staff scientists and fellow interns
- *Binary Neutron Stars Thesis Project* *Aug 2013 – May 2014*
 - Independently studied numerical relativistic techniques to model binary neutron star system, solving coupled non-linear systems in MATLAB
 - Presented in front of physics faculty and Honors college to graduate with Honors

Skills

Programming Languages: C, Python, FORTRAN, MPI, OpenMP, OpenACC, CUDA, Bash, Git

Methods: Iterative solvers, quadrature methods, phenomenological modeling, stochastic algorithms, neural networks, genetic algorithm, particle swarm optimization, Bayesian analysis, spectroscopic analysis