# Peyton D. Murray

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**Education**      University of California, Davis (2012 - 2018)          St Mary's College of California (2007 - 2011)
- Ph. D. Physics (Dec 2018)          • B. S. Physics, Minor: Mathematics
- M. S. Physics (Dec 2013)

**Computing**      Python (proficient), C/C++ (intermediate), Go (intermediate), Javascript (intermediate). Python scientific/data vis stack (contributor to `scipy`, `numpy`, `jupyter`, `conda`, ...). Dashboarding with `panel`, `bokeh`, `plotly`. Web development with FastAPI, Django REST, frontends with React. Testing with `pytest`, `hypothesis`. Git for version control.

**Skills**      Agile Development, Automated Testing, Simulations, Continuous Integration, Data Analysis, Statistics, Visualization, Linux, Python Data & Visualization Ecosystem (`numpy`, `scipy`, `pandas`, `jupyterlab`, `matplotlib`, ...), Bayesian parameter estimation, HPC (`slurm`), Distributed Computing, VTK.

**Experience**

**Quansight** · Arcata, CA          *Senior Software Engineer*          May 2021 - Present

- As part of Quansight's consulting branch, delivered custom-built solutions to meet a wide range of customer needs. Much of this work consisted of open source contributions to upstream Python packages in the scientific Python ecosystem - see my GitHub profile for examples of my work. In addition to being technical lead for numerous projects, I also acted as a personnel manager for a team of Quansight developers from around the globe.

**Voltaiq** · Berkeley, CA          *Software Engineer*          Oct 2019 - May 2021

- Developed and deployed bespoke production-quality data analysis and visualization tools to provide quantitative insight into battery performance for some of the world's largest battery manufacturers using Django (with Django REST Framework), Plotly.js, and React.

**Tampere University** · Finland          *Postdoctoral Scholar*          Jan 2019 - Aug 2019

- Simulated nanoscale magnetic materials on the CSC's Taito-GPU supercluster using a combination of open source software and in-house code (Go, CUDA, and Python). Numerical calculations of domain wall motion were compared to an analytic model [Skaugen 2019].

**UC Davis Department of Physics** · Davis, CA          *Graduate Student Researcher*          Aug 2012 - Dec 2018

- Developed PyFORC, a Python-based suite of open source tools for analyzing and visualizing magnetic measurements using the First-Order Reversal-Curves (FORC) technique.
- Streamlined the Liu group's material analysis pipeline by developing tarmac, a Python library for quickly visualizing Markov-chain monte carlo (MCMC) samples. This library makes it simple to identify correlations between parameters in a statistical model and evaluate convergence during fitting.
- Fabricated and characterized a wide range of nanoscale magnetic materials, including nanoparticles, thin films, single crystals, and patterned nanostructures using a variety of cutting-edge techniques. Programmed data acquisition and instrument control software for crucial laboratory equipment.

**Lawrence Berkeley National Laboratory** · Berkeley, CA          *Junior Specialist*          May 2011 - May 2012

- Created control software (C++, with a Qt-based GUI) for automated circuit testing. Hardware tested with this system was deployed as part of the Insertable B-Layer system at the Large Hadron Collider in 2014, enabling continued studies of the Higgs boson.

**St. Mary's College of California** · Moraga, CA          *Research Assistant*          Sep 2010 - May 2011

- Classified astronomical data from the Arecibo Observatory as part of the ALFALFA Collaboration.

**Teaching**      *Teaching Assistant*, **Physics Department, University of California, Davis**          2012 - 2016
      *Student Tutor and Live-In Mentor*, **Dept. of Physics, St Mary's College of California**          2010 - 2011

*Publications, selected conferences, and laboratory skills are listed on the extended CV on my website.*