# Peyton D. Murray

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**Education**

University of California, Davis (2012 - 2018)
- Ph. D. Physics (Dec 2018)
- M. S. Physics (Dec 2013)

St Mary's College of California (2007 - 2011)
- B. S. Physics, Minor: Mathematics

**Computing**

Python, C/C++, Go, Javascript, Rust. Python scientific/data vis stack (contributor to `scipy`, `numpy`, `jupyter`, `conda`, ...). Dashboarding with `panel`, `bokeh`, `plotly`. Web development with FastAPI, Django/Sqlalchemy ORMs, frontend experience with JS/TS, 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`, ...) including coding at C/Python and Rust/Python interfaces; 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. Contributed open source bug fixes, feature development, and maintenance for critical packages in the Python scientific ecosystem, including `jupyter`, `scipy`, `numpy`, `conda`, `ray`, the `tensorflow` ecosystem, and many smaller projects; see my GitHub profile for examples of my work. As technical lead I designed architecture, led development, and delivered solutions on time and within budget. Acted as a personnel manager for a team of developers from around the globe.

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

- Built a SAAS platform for battery R&D, working full-stack to develop and deploy data analysis and visualization tools to provide quantitative insight into battery performance for some of the world's largest manufacturers using Python, Django (with PostgreSQL), Plotly.js, and React.

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

- Contributed voronoi tesselation and performance improvements to Mumax3, an open source magnetics simulation library written in Go and CUDA C. Simulated nanoscale magnetic materials on the CSC's GPU cluster. 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.
- 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

- Developed control software (C++ and Qt) 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.*