Devin Short

Seattle, WA | shortda@uw.edu | shortorian.github.io

PROFILE: expert researcher with 15 years' experience in academic R&D

- Test engineering (device prototyping, python unit tests)
- Electrical engineering (HV, RF, sensors, controls)
- Mechanical engineering (UH vacuum, enclosures)
- CAD, FEA, physics-based modeling
- Data analysis, visualization (python)
- Taught 15 college courses

EXPERIENCE

Research Assistant | TRIUMF, Vancouver BC **2013 – 2014**

- Modeled, prototyped, and assembled electrical and vacuum systems for an atomic mass spectrometer.
- Integrated controls and sensors to iteratively refine measurement precision.
- Produced designs and drawings, did assembly and testing for UH vacuum systems and enclosures.
- Prototyped and implemented switched HV and RF voltage supplies for ion optics.
- Wrote Monte Carlo code and designed electric field simulation to model ion losses in the spectrometer.
- Coordinated work between physics research groups in Germany and Canada.
- Determined failure mode of an in-vacuum ion optical assembly and helped redesign components.
- Evaluated various power and RF wiring configurations for ion optics to determine best performance.
- Implemented a four-point test of surface conductivity using bench power supplies and a multimeter.

Research Assistant | UW Center for Experimental Nuclear Physics and Astrophysics, Seattle WA **2008 – 2012**

- Calibrated radiation detectors, determined their precision, and used them for physics experiments.
- Tuned ion beams to experiment specifications and monitored beam quality during accelerator operation.
- Designed, assembled, and operated electrical, vacuum, cryogenic, and detector systems for experiments.
- Implemented Monte Carlo simulations of radiation detectors to analyze experimental data.
- Completed machine shop training course and performed basic machining.

Research Assistant | Lawrence Berkeley National Laboratory, Berkeley CA **Spring 2010**

- Designed infrared laser amplifier. Produced drawings. Purchased and assembled optics.

EDUCATION

PhD, History of Science | University of Washington, Seattle WA **2018 – Present**

Graduate Certificate in Climate Science | University of Washington, Seattle WA **2018 – Present**

Currently writing a dissertation on the history of computer modeling in climate science.

- Developed graph database system for primary source research and network analysis in social science.
- Wrote Python code to parse customizable text input formats into normalized database tables.
- Maintained and updated automated unit tests during code development.
- Passed written and oral PhD candidacy exam covering over 250 books and articles in multiple fields.
- Awarded American Meteorological Society Graduate Fellowship in the History of Science in 2021.

MSc, Nuclear Chemistry | Simon Fraser University, Burnaby BC **2014 – 2018**

- Commissioned mass spectrometer for isobar separation at TRIUMF, Canada's particle accelerator center.
- Awarded Simon Fraser University Chemistry Alumni Graduate Scholarship in 2016.

BSc, Physics | University of Washington, Seattle WA **2007-2012**

- Awarded US Department of Energy Spring Undergraduate Laboratory Internship in 2010.

SUMMARY OF PUBLICATIONS

Complete list available at shortorian.github.io/publications

- Co-authored 12 journal articles reporting on instrumentation and experiments in nuclear science.
- Sole author of one magazine article and two book reviews in history and philosophy of science.
- Delivered 9 presentations at regional, national, and international conferences.

ADDITIONAL SKILLS

- Advanced Python. Experience with R, Lua, Mathematica. Limited JavaScript, FORTRAN, SQL, C++.
- Advanced modeling with SciPy, COMSOL, SIMION. Limited MATLAB, LabVIEW.
- Experience with Inventor, Illustrator, LaTeX, Word, Excel, PowerPoint. Limited AutoCAD.
- Work safely with high voltage, radiation fields, glove boxes, clean rooms, and class 4 lasers.
- Built knock down workbench for woodworking, building bike wheels, and other projects in small space.