

David Alden Severin Ryberg
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Professional Skills

Data Analysis and Visualization	Multiple Programming Languages
Power Systems Design and Modelling	Linux and Windows Administration
Renewable Energy Systems Design	Software Development
Project Management	Circuit Design and Fabrication
Experimental Design and Operation	Web API Development and Interaction
Multi-Physics Simulations	CAD modelling

Education

Texas Tech University. Lubbock, Texas

MS in Electrical Engineering	-----	Aug 2015
		GPA: 3.87
BS in Physics	-----	Aug. 2012
		GPA: 3.56

Professional Experience

Graduate Intern -----Dec. 2014 – on going
National Renewable Energy Laboratory (NREL),
Golden, Colorado

Conducted national-scale studies of simulated PV arrays; focusing on interannual variability and quantifying the detrimental effects of snow coverage. Assisted in the ongoing development (in C++) of NREL's System Advisor Model (SAM). Authored multiple sample python scripts for SAM users which exemplify interfacing with the SAM software development kit, data management and visualization, querying external web api's, and database interaction. Organizer for the 2015 SAM Virtual Conference.

Adjunct Professor (Introductory C++) ----- Aug. 2015 – on going
Colorado School of Mines (CSM),
Golden, Colorado

Instructed two sections of an introductory C++ programming course. Discussion topics focused on basic program structure, C++ syntax, modern programming conventions, data types, efficient memory usage, and various other C++ related topics

Professional Experience (cont.)

Research Associate-----Aug. 2012 - Aug. 2014
Pulsed Power and Power Electronics,
Texas Tech University. Lubbock, Texas

Performed applied research focused on high energy pulsed power systems (>20 kV) including complex experimentation and simulations. Expert at leading complex, collaborative technical and theoretical research using LASER systems, particularly diffraction from gratings and spectroscopy techniques. Built and ran vacuum systems operating at pressures below 10^{-6} torr.

Research Assistant-----Aug. 2011 - Aug. 2012
Physics Dept.
Texas Tech University. Lubbock, Texas

Retail Store Manager-----June 2010 - Jan. 2012
Smoking Dragon Gifts
Lubbock, Texas

Technical Skills and Abilities

- Programming skills in C++, Python, MatLab, OpenCL, JavaScript, SQL, MongoDB, HTML, and CSS
 - Software development using C++
 - Experience Python scripting. Especially familiar with the following module: numpy, pandas, matplotlib, and scipy.
 - Developed web api's based on NodeJS and ExpressJS frameworks
- Circuit design and fabrication
 - Developed power system designs as a part of thesis research
 - Working knowledge of programming micro controller devices. Specifically those from the ATtiny Atmel family
- Extensive experience with LINUX and Windows based operating systems
 - Experienced in building and maintaining computer workstations (both Windows and LINUX based), server stations, and external internet servers
 - Setup and managed several servers on Amazon's Elastic Computing Cloud
- Application experience in Autodesk Inventor, OrCAD/ Pspice, System Advisor Model (SAM), HOMER, COMSOL Multiphysics and GEANT 4
- Highly proficient in all Microsoft Office applications
- Construction, maintenance, and repair experience

Publications

- “Integration, validation, and application of a PV snow coverage model in SAM”. National Renewable Energy Laboratory (*in review*)
- “Quantifying Interannual Variability for Photovoltaic Systems Using TMY2 Data in PVWatts”. National Renewable Energy Laboratory. (*In review*)
- “System for time-discretized vacuum ultraviolet spectroscopy of spark breakdown in air”. Review of Scientific Instruments. Volume 85. 2014