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SKILLS

Languages: Python, Bash, MATLAB, Fortran, C++ (some), Scheme (some)
Tools: regex, NumPy, SciPy, L^AT_EX, Git, Gnuplot, MySQL, HTML, CSS
Other: numerical solution of ODEs and PDEs, optimization, coupled simulations

EXPERIENCE

Fellow Insight Data Science Mountain View, CA 1/14 – Present

- Created dogWalkScore, a tool for scoring the dog-friendliness of SF neighborhoods: walkingthed.org.
- Joined datasets from OpenStreetMaps, Yelp, Google Maps, and data.sfgov.org into a MySQL database.
- Built a graph of SF streets and applied a modified Dijkstra algorithm for routing between addresses.
- Deployed dogWalkScore as a web application on AWS using Python, Flask, and jQuery.

Postdoc and Lecturer University of California, Berkeley, CA 1/12 – 12/13

- Developed a parallelized Python program for coupling the simulations of particle transport, thermal-hydraulics, depletion, and recycling of nuclear reactor cores while saving 90% of runtime: jeffseif.github.io/MocDown.
- Discovered the cause for negative feedback in multi-recycling thorium-fueled boiling water reactors.
- Taught a nuclear reactor physics class to 36 students and mentored several graduate researchers.

Ph.D. Researcher Lawrence Livermore National Laboratory Livermore, CA 6/08 – 12/11

- Developed a Python program suite for propagating uncertainty within particle transport simulations.
- Patched a 500k line particle transport program written in Fortran 90 for adjoint-based sensitivity analysis.
- Fixed bugs and added features to the group's simulation suite, written in C++ and Perl.
- Wrote Python and Bash scripts to parse and convert nuclear data between numerous formats.

Engineer and Co-Op Nuclear Regulatory Commission Washington, D.C. 1/08 – 5/08; 6/07 – 8/07; 6/04 – 8/06

- Enabled a Fortran 90 2D neutron transport solver to simulate reflection in non-rectangular geometries.
- Researched, implemented, and validated drag correlations for two-phase flow in a Fortran 90 nuclear reactor thermal-hydraulics simulator.
- Designed and constructed a database for nuclear fuel storage and inspections.

EDUCATION

University of California, Berkeley December 2011/2007
Ph.D. and M.S. in Nuclear Engineering

University of Maryland, College Park May 2006
B.S. Cum Laude in Nuclear Engineering With Honors

SELECTED AWARDS

Lawrence Scholar Program 1/10 – 12/11
Engineering Honors Program 5/04 – 5/06
Nuclear Reactor Operator's License 7/04
World speed record for pilot of a high school human-powered submarine 5/01

INTERESTS

Playing soccer, watching awful movies, reading, analyzing good films