

caleb miles

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OVERVIEW

I am a graduate of Claremont McKenna College where I obtained a dual degree in Physics and Mathematics. It is my goal to work on exceptionally challenging computational problems in applied science. I am very excited by the advancements in the use of computers in the modeling of complex physical systems and am very interested in creating software that enables computational exploration of the physical world; and I am dedicated to the development of open source software because I believe that software, like ideas, are best when shared openly.

Technical Skills

Languages: Python, C/C++, BASH
Software: MATLAB, Mathematica, SAGE, FEniCS, OpenFOAM, COMSOL
Linux Distributions: Ubuntu, Fedora, SUSE
Version Control: Git, Mercurial

INDUSTRY EXPERIENCE

Clinicast, San Francisco CA

Consultant Programmer, December 2012 - January 2013 Created an extension module using the Python/Numpy C-API.

inktank, Los Angeles CA

Software Developer - October 2012 to April 2013 Junior developer of the RADOS Gateway, a RESTful interface to a Ceph cluster supporting Amazon S3 and OpenStack Swift API calls.

- Exposed RESTful API's for user, bucket, and object management of the Rados Gateway.
- Supported Professional Services staff in customer assistance.
- Authored API specification documentation.
- Performed refactoring of existing CLI administration tools to support the creation of RESTful interface.
- Reviewed community submitted patches.
- Performed statistical analysis on proposed patches to the CRUSH algorithm using Numpy/SciPy.

inktank, Los Angeles CA

Development Intern - May 2012 to September 2012 Performed experimental algorithm analysis. Developed software in response to feature requests and bug reports in collaboration with lead developers.

- Implemented portions of the S3 API for the RADOS gateway.
- Created new functionality in the RADOS gateway administrator program.
- Performed statistical analysis of the CRUSH algorithm using R and NumPy/SciPy.
- Amended man pages and unit tests to document new functionality.

TradeLink LLC, Chicago IL

Consultant Programmer - Winter 2010

Used Cython to improve the performance of a large Python application.

NRG Systems Inc, Hinesburg VT

Engineering Intern - Summers of 2007, 2008, and 2010 Involved in a wide variety of projects in the research and development, and technical support departments.

Employed Awk and Sed to perform data set validation.

Developed Python scripts for data analysis and visualization.

Designed and fabricated test and calibration fixtures.

TEACHING EXPERIENCE

Claremont McKenna College, Claremont CA

Biology Teaching Assistant - Semesters of Fall 2010 to Spring 2012 Teaching assistant for Biology 133: Introduction to Mathematical Physiology, and Biology: 155: Selected Topics in Computational Neuroscience instructed by Professor John Milton.

Delivered short lectures on computational methods and tools.

Created short Python scripts to demonstrate course topics.

Assisted in the organization of a two day workshop on scientific programming.

Physics Grader - Semesters of Fall 2010 to Fall 2011 Grader for Physics 100: Computational Science and Engineering, and Physics 108: Programming for Scientists and Engineers.

Graded weekly MATLAB homework assignments.

RESEARCH EXPERIENCE

University of Hawai'i, Honolulu HI

Undergraduate Intern - Summer of 2011 Participated in a NSF funded Research Experience for Undergraduates in Computational Fluid Dynamics under principal investigator Dr. Marcelo Kobayashi.

Modified standard OpenFOAM solvers for use in non-inertial reference frames.

Performed verification and validation studies of modified work.

University of New Mexico, Albuquerque NM

Undergraduate Researcher - Summer of 2010 Participated in a NSF funded Research Experience for Undergraduates in computational quantum chemistry under principal investigator Dr. Hua Guo.

Utilized the open source Atomic Simulation Environment to create Python scripts to drive simulations.

Created Python scripts for data reduction and chart generation during live simulations.

Education

Bachelor of Arts in Physics and Mathematics from Claremont McKenna College. Sequence (minor) in Scientific Modeling. Graduated in 2012.