IAN ROSE

Data science, software engineering, geology

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WORK

2018-present	**Quansight**
Software Engineer	Contractor developing tools and integrations for data scientists. Much of my work has been on improving the integration a GPU-based relational database (OmniSci) with the broader Python data science ecosystem.
2016-present	**Berkeley Institute for Data Science**
Postdoctoral Fellow	Core developer for Project Jupyter. I am a developer of JupyterLab, the next-generation front-end for Jupyter notebooks. This is one of the central tools used by data scientists (primarily, but not exclusively in the Python ecosystem). In this capacity I do software engineering, mentorship, and outreach to the data science community. I am also a member of the Pangeo collaboration, which has the goal of bringing petabyte-scale analysis of Earth data to the cloud and HPC environments.

EDUCATION

2009-2016	**The University of California, Berkeley**
Ph.D.	Earth and Planetary Science Thesis: *True polar wander on convecting planets*
2005-2009	**Yale University**
B.S.	Geology and Physics

COMPUTING

Programming Languages	C, C++, JavaScript, TypeScript, Python, MATLAB/Octave, SQL, bash, awk, HTML, CSS
Computational Methods	GIS analysis, visualization and mapping, ordinary/partial differential equations, regression modeling, Monte Carlo methods
Software	LaTeX, git, GitHub, node, Jupyter notebooks, standard *nix tools
Operating Systems	Linux, Mac OS, Windows

SELECTED SOFTWARE PROJECTS

JupyterLab	Next generation front-end for Jupyter. In addition to developing the core project, I also help develop and shepherd the extension ecosystem, including extensions for working with Dask, GitHub, Google Drive, and LaTeX. (core developer)
jupyterlab-omnisci	Integrations between JupyterLab and OmniSci, a GPU-based relational database for fast SQL analytics. (author)
Interactive Earth	Educational software for teaching about the physics of planetary interiors, including thermal and thermochemical convection and seismic tomography. (author)
Commuting Operation	Web application for what I want out of a real-time transit arrival service. (author)
buckinghampy	Educational Python module for performing dimensional analysis. (author)

PUBLICATIONS

Swanson-Hysell, N., Ramezani, J., Fairchild, L., and Rose, I.. *Failed rifting and fast drifting: Midcontinent Rift development, Laurentia's rapid motion and the driver of Grenvillian orogenesis*. In Press, Geological Society of America Bulletin

Rose, I. and Buffett, B.. *Scaling for rates of true polar wander in convecting planets and moons*. Physics of the Earth and Planetary Interiors, Volume 273. 2017.

Rose, I., Buffett, B., and Heister, T. *Stability and accuracy of free surface time integration in viscous flows*. Physics of Earth and Planetary Interiors, volume 262. 2017

Cottaar, S., Heister, T., Rose, I., and Unterborn, C.. *BurnMan: A lower mantle mineral physics toolkit*. Geochemistry, Geophysics, Geosystems, 2014.

SELECTED TALKS AND CONFERENCE PROCEEDINGS

Rose, I. *JupyterLab*, PyData Los Angeles, 2018

Colbert, C., and Rose, I. *JupyterLab*, JupyterCon, 2018

Colbert, C., Granger, B., and Rose, I. *JupyterLab, the next-generation Jupyter frontend*, JupyterCon, 2017

Colbert, C., Granger, B., and Rose, I. *JupyterLab + Realtime Collaboration*, PyData Seattle, 2017

Rose, I. *Interactive investigations into planetary interiors*. Talk, AGU Fall Meeting 2015

Rose, I., Buffett, B., and Heister, T. *Stable time integration of a free surface in geodynamics simulations*. Poster, AGU Fall Meeting 2015

Rose, I. *True polar wander in convecting planets*. Computational Math Seminar, Clemson University, April 2014

Cottaar, S., Heister, T., Rose, I., and Unterborn, C., *An introduction to BurnMan*. Computational Infrastructure for Geodynamics Webinar, October 2015

Rose, I., and Buffett, B.. *Continents and Earth's rotational stability*. Poster, AGU Fall Meeting 2014

Rose, I., and Buffett, B.. *Rates of true polar wander in convecting planets*. Poster, SEDI meeting 2014