Justin Gilmer

CONTACT INFORMATION

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BACKGROUND

- Managing and leading collaborative software development efforts across multiple universities and experience levels
- Mentoring graduate and undergraduate students in software development best practices
- Developing course material and teaching undergraduate-level chemical and mechanical engineering classes
- Performing large scale time series data analysis and regression analysis

PROFESSIONAL EXPERIENCE

Vanderbilt University, Interdisciplinary Materials Science, Nashville, TN
Graduate Student May 2016 - Present

- Designed, led and organized a computational engineering course, teaching `python` to freshman engineers
- Mentored high school and undergraduate students year-round in molecular simulation and `python` software development
- Maintained and updated lab computational resources, including a 14-node computing cluster
- Developed and implemented an extensible "plug-in" API using `setuptools`
- Packaged and released multiple versions of our lab's open-source `python` libraries with `conda-build`, `conda-forge`, and `pypi`
- Presented our lab's open source libraries and computational research at multiple academic conferences through talks, posters, and tutorial sessions
- Created tutorials for using our lab's software, and led tutorial sessions at conferences
- Daily user: `Python` (numpy, unyt, pandas, setuptools, pytest, jupyter, matplotlib), `git`, `bash`, `latex`

Vanderbilt University, Physics and Astronomy, Nashville, TN
Summer Researcher May 2016 - Nov. 2016

- Assisted in the development and validation of time-dependent density functional theory (TD-DFT) algorithms to increase accuracy without reducing performance
- Tested various implementations of the algorithm and profiled their effectiveness
- Coauthored a publication from the results of this project
- Daily user: `FORTRAN90`, `subversion`, `git`, `gnuplot`

Clemson University, Chemistry, Clemson, SC
Undergraduate Researcher May 2015 - May 2016

- Developed helper tools in `python` for the graduate and undergraduate students in the lab to identify molecular fragments from high temperature simulations
- Began development of a `C++` project to analyze simulation data to estimate melting point
- Daily user: `python`, `gnuplot`, `C/C++`, `bash`

Clemson University, Housing and Dining, Clemson, SC
Academic Tutor Aug. 2013 - May 2016

- Provided academic tutoring to 500 freshman science and engineering students
- Demonstrated high proficiency in all first-year engineering and science courses as well as many sophomore and other specialized courses
- Mentored minority students in addition to standard tutoring services

EDUCATION

Vanderbilt Univeristy, M.Sc. Materials Science 2016 - Present

Clemson University, B.Sc. Materials Science, Minor Chemistry 2012 - 2016