

# Adam Stewart

Graduate Student,  
University of Illinois at Urbana-Champaign

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## Education

- 2017 - Present **Ph.D., Computer Science**, *University of Illinois at Urbana-Champaign, College of Engineering*.
- 2010 - 2014 **B.S., Science of Earth Systems**, *Cornell University, College of Engineering, magna cum laude*.
- Honors Thesis: Monitoring Glacial Velocity Variation in the Russian High Arctic Using Remote Sensing

## Professional Experience

- 2015 - 2017 **Argonne National Laboratory, Lemont, IL**, Assistant HPC System Administrator.
- Collaborated on the development of Spack, a Supercomputing PACKage manager written in Python and hosted on GitHub, enabling the installation of scientific software with multiple compilers and MPI libraries
  - Managed a supercomputing cluster composed of 720 36-core Intel Broadwell nodes, each with 128 GB of RAM, and 360 64-core Intel Knights Landing nodes, each with 96 GB of RAM, with a peak theoretical performance of 1.5 PFlops
- 2014 - 2015 **Lockheed Martin, Owego, NY**, Associate Software Engineer.
- Enhanced simulator for modeling LiDAR data to test software developed to detect downed power lines and flooding
  - Improved performance of the machine learning software used by the USPS to sort and deliver mail
- 2010 - 2012 **Paleontological Research Institution, Ithaca, NY**, Collections Assistant.
- Inventoried and relabeled older, more delicate specimens for organization and preservation
  - Renovated and reorganized upper collections under NSF grant, allowing for easier access for researchers

## Teaching Experience

- 2017 **Department of Computer Science, University of Illinois at Urbana-Champaign, Urbana, IL**, Teaching Assistant.
- Served as a Teaching Assistant for Numerical Methods I course of over 500 students
  - Held office hours, wrote homework assignments and exam questions, and answered course questions on Piazza
  - Presented a crash course lecture on Python, specifically for working with Numpy, Scipy, and Matplotlib
  - Managed course website through Relate framework, including reference pages summarizing course content
- 2014 **Department of Earth and Atmospheric Sciences, Cornell University, Ithaca, NY**, Teaching Assistant.
- Served as a Teaching Assistant for Satellite Remote Sensing Training for Biological Oceanographers course
  - Taught an intensive graduate-level course composed of 20 oceanographers from around the world
  - Wrote Python lesson plan from scratch and answered questions about Python and IDL programming
  - Debugged satellite image processing scripts and managed Python module installation from source code

- 2014 **Department of Computer Science, Cornell University, Ithaca, NY**, Undergraduate Python Consultant.
- Helped teach Introduction to Computing using Python and Transition to Object-Oriented Programming
  - Facilitated learning in a weekly lab session of 36 students, troubleshoot assignments, and graded exams
  - Held weekly consulting hours, working one-on-one with students to help clarify course material
- 2012 - 2013 **Department of Physics, Cornell University, Ithaca, NY**, Undergraduate Teaching Assistant, PhysTEC Program.
- Taught course material for Introduction to Mechanics, Heat/Electromagnetism, and Oscillations, Waves, and Quantum Physics courses to 50+ students
  - Led cooperative discussion and laboratory sections to promote understanding of physics material
  - Coordinated homework study groups to encourage collaboration on homework assignments
- 2008 - 2012 **Camp Barton, Boy Scouts of America, Trumansburg, NY**, Nature Director.
- Managed a department of 6 staff members, training them to become ecology counselors as well as leaders
  - Instructed between 3 and 5 weekly merit badges to up to 30 boy scouts ranging in age from 10 to 18
  - Rewrote lesson plans for all 20 merit badges, working with counselors to address various shortcomings
  - Established new off-site ecology program, introducing scouts to advanced topics at outside organizations
  - Maintained Camp Conservation Plan and oversaw conservation projects led by each Boy Scout troop

## Research Experience

- 2013 - 2014 **Department of Earth and Atmospheric Sciences, Cornell University, Ithaca, NY**, Undergraduate Research Assistant, with Prof. Matthew E. Pritchard.
- Investigated the effects of climate change on glacial velocities, calving rates, and ice shelf breakup using remote sensing techniques such as feature tracking
  - Processed ASTER and Landsat satellite imagery using Python, MATLAB, and Bash scripts
- 2012 - 2013 **Department of Earth and Atmospheric Sciences, Cornell University, Ithaca, NY**, Undergraduate Research Assistant, with Prof. Larry D. Brown.
- Studied the application of seismic interferometry to monitor magma reservoir inflation at Montserrat
  - Researched the effects of seismic attenuation on aftershocks by analyzing records from dense station arrays

## Publications

### Papers

- [1] Andrew K. Melkonian, Michael J. Willis, Matthew E. Pritchard, and Adam J. Stewart. Recent changes in glacier velocities and thinning at Novaya Zemlya. *Remote Sensing of Environment*, 174:244–257, 2016.

### Tutorials

- [2] Argonne National Laboratory. *Managing HPC Software Complexity with Spack*, Lemont, IL, June 2017.
- [3] SuperComputing 2017. *Managing HPC Software Complexity with Spack*, Denver, CO, November 2017.

## Grants, Honors, and Awards

- 2014 Frank H. T. Rhodes Award
- 2010 - 2014 Dean's List
- 2013 Michael W. Mitchell Prize
- 2012 - 2013 Engineering Learning Initiatives Research Grant
- 2011 Gertrude Spencer Prize Honorable Mention

2010 Lockheed Martin Foundation Scholarship  
2008 Eagle Scout

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## Outreach and Leadership Experience

2015 Mentor for New Visions Job Shadowing Program at Lockheed Martin  
2015 Test Proctor for Cornell Science Olympiad Invitational  
2012 - 2014 President of Science of Earth Systems Student Association  
2011 - 2012 Tae Kwon Do Team  
2010 - 2012 Executive Board of Cornell Ski and Snowboard Club  
2002 - 2012 Boy Scouts of America  
2010 - 2011 Volunteer in Collections Department of Paleontological Research Institution

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## Computer Skills

Programming Python, Bash, Perl, Ruby, Java, C, C#, MATLAB, OCaml, JavaScript, Make, Expect, Tcl, IDL  
Markup  $\LaTeX$ , Markdown, reStructuredText, YAML, HTML, CSS, XML, XPath, XSLT, Graphviz  
VCS Git (GitHub, GitLab), Mercurial (Bitbucket), CVS, Subversion  
Soft. Eng. Travis CI, Codecov, Coveralls, PyTest, Flake8, Sphinx, GNU Debugger, Jira, Confluence, Crucible  
Sys. Admin. Spack, Lmod, Environment Modules, SoftEnv, Torque, Maui, Slurm, GPFS  
IDEs Vim, Sublime Text, Visual Studio, Eclipse, WordPress  
Platforms Linux (Fedora, RHEL, CentOS, Ubuntu, Mint), macOS, Windows