ALEXANDER G. ANDERSON
E-mail: aga@berkeley.edu   Current Location: Berkeley, CA

EDUCATION
University of California, Berkeley – Berkeley, CA – Fall 2012 – Present
Ph.D. Candidate in Physics studying Computational Neuroscience and Machine Learning   GPA: 3.96/4.0
Washington University in St. Louis – St. Louis, MO – Fall 2008 – Spring 2012
B.A., Major: Mathematics   Second Major: Physics   GPA: 4.0/4.0 (Summa Cum Laude)

HONORS AND AWARDS
- National Science Foundation Research Fellow (Fall 2013 – Summer 2016)
- Barry M. Goldwater Scholarship (2011 - 2012)
- Arthur Holly Compton Full Tuition Merit Scholarship (2008 - 2012)
- Washington University Physics Department Senior Prize (2012)
- Putnam Math Competition: Honorable Mention, National Rank: 26th out of about 3000 students (2012)

PUBLICATIONS
- **Anderson AG**, Bender CM. (2012) Complex Trajectories in a Classical Periodic Potential. Journal of Physics A 45, 455101. http://arxiv.org/abs/1205.3330
- **Anderson AG**, Bender CM, Morone UI. (2011) Periodic Orbits for Classical Particles Having Complex Energy. Physics Letters A 375(39): 3399-3404. http://arxiv.org/abs/1102.4822
- Pope WH, Jacobs-Sera D, Russell DA, *et al*. (2011) Expanding the Diversity of Mycobacteriophages: Insights into Genome Architecture and Evolution. *PLoS ONE* 6(1): e16329. http://www.plosone.org/article/info:doi/10.1371/journal.pone.0016329

RELEVANT COURSEWORK
Graduate Level: Statistical Learning Theory, Neural Computation, Parallel Programming, Statistical Biophysics, Statistical Genomics, Quantum Mechanics (I and II), Mathematical Methods (I and II), Asymptotic Methods and Perturbation Theory, Statistical Mechanics, Electromagnetism, Classical Mechanics
Undergraduate Level: Algorithms, Machine Learning (through Coursera), Linear Algebra, Modern Algebra

RESEARCH EXPERIENCE
Olshausen Research Group – Berkeley, CA
Ph.D. Candidate: Summer 2014 to Present
- Developed a novel model of high-acuity vision presence of fixational eye movements using graphical modeling, sparse coding, expectation maximization, particle filtering, and theano
- Implemented a variety of deep learning algorithms including a LSTM in theano, deep style in python/Caffe and an addition to Diffusion Probabilistic Models in theano/blocks
Hallatschek Research Group – Berkeley, CA
Graduate Student Researcher: Spring 2013 to Spring 2014
- Evaluated theoretical models of biofilm growth using simulations and theoretical arguments
- Optimized runtime cost and memory usage for algorithm using C++
Washington University Physics Department – St. Louis, MO
Undergraduate Researcher: Summer 2010 to Spring 2012
- Studied trajectories of classical particles traveling in the complex plane using *Mathematica*
- First author of two papers, one published in *Physics Letters A,* and one in *Journal of Physics A*

TECHNOLOGY SUMMARY
- Python, *Mathematica*, C++, MATLAB, R
- git, Theano, Caffe, Vim, Emacs, Sublime Text 3, Flake8