Andrew Berger

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github.com/rueberger

Education

2012 - 2016 **BA Math; BA Physics**, *University of California, Berkeley*, Berkeley, CA.

Skills

Mathematics analysis (real, complex), algebra (linear, abstract, boolean), logic, computability theory ...

Physics quantum mechanics, statistical mechanics, classical mechanics, electrodynamics ...

Machine Learning Monte Carlo techniques, deep learning, energy based models, Markov fields, Bayesian statistics, parameter estimation methods, variational inference ...

Technologies Scientific Python, Java, emacs, Unix, git, docker, LaTeX, Tensorflow, MongoDB, Redis, Kafka, Jenkins...

Industry Experience

3/19 - 8/19 **Head of machine learning**, *Silicon Therapeutics*, Boston, MA.
Led the effort to develop deep learning based methods for drug discovery. Conceptualized, planned and developed near and long-term ML projects.

2018 **Co-founder and lead everything**, *Stealth startup*, Boston, MA.
Co-founded and led a machine learning startup. As the only full-time founder, I wore every hat and built all aspects of the company: models, software architecture, data infrastructure, devops, sysops. Took the company from a fragile proof-of-concept to production ready models, real-time data feeds and stable systems. Put on ice after failing to meet performance targets by an internally imposed deadline.

Summer 2014 **Data Science Intern**, *Dwellaware*, San Francisco, CA.

Summer 2013 **Bioinformatics Research Intern**, *Biomatica*, Berkeley, CA.

Research Experience

9/16 - 10/17 **Research Scientist**, *Howard Hughes Medical Institute*, Ashburn, VA.
Developed spike inference techniques for fluorescence microscopy using state of the art machine learning techniques. Work with Srini Turaga.

Summer 2016 **Janelia Undergraduate Scholar**, *Howard Hughes Medical Insitute*, Ashburn, VA.
Developed reconstruction methods for novel kilohertz compressive-sensing two-photon microscope. Project with Kaspar Podgorski and Srini Turaga.

2013 - 2016 **Research Assistant**, *Redwood Center for Theoretical Neuroscience*, Berkeley, CA.

Summer 2015 **Research Assistant**, *Center for the Neural Basis of Cognition*, Pittsburgh, PA.

Publications

2015 A Berger, M Mudigonda, MR Deweese, J Sohl-Dickstein. A Markov Jump process for more efficient Hamiltonian Monte Carlo. *preprint at arXiv:1509.03808*

2018 K McDole, L Guignard, F Amat, A Berger, G Malandain, LA Royer, SC Turaga, K Branson, PJ Keller. In Toto Imaging and Reconstruction of Post-Implantation Mouse Development at the Single-Cell Level. *Cell, 175(3), 859-876.*