

Andrew M. McNutt

Visualization Researcher & Computer Science Graduate Student

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Education

University of Chicago

Doctoral Student, Computer Science, September 2017 to Present

Advised by [Gordon Kindlmann](#)

Reed College

Bachelor of Arts, Physics, 2010 to 2014

Senior Thesis: *Non-equivalent Lagrangian Mechanics*, advised by [Nelia Mann](#)

Commendation of Academic Excellence

Publications

Linting for Visualization: Towards a Practical Automated Visualization Guidance System

IEEE Transactions of Visualization and Computer Graphics - VisGuides (2018)

A McNutt, G Kindlmann

Data Mining and Computational Modeling of High-Throughput Screening Datasets

Reporter Gene Assays, pp 197–221 (2018)

S Ekins, AM Clark, K Dole, K Gregory, **A McNutt**, AC Spektor, C Weatherall, N Litterman, B Bunin

Open Source Bayesian Models: I. Application to ADME/Tox and Drug Discovery Datasets.

Journal of Chemical Information and Modeling (2015)

AM Clark, K Dole, A Coulon-Spektor, **A McNutt**, G Grass, JS Freundlich, RC Reynolds, & S Ekins.

The Schrodinger-Newton system with self-field coupling.

Classical and Quantum Gravity (2015)

J Franklin, Y Guo, **A McNutt**, & A Morgan.

Nonequivalent Lagrangian Mechanics

Undergraduate Thesis. Reed College (2014)

A McNutt.

Presentations

Nonequivalent Lagrangian Mechanics

Reed Physics Seminar, April 8, 2014, Reed College, Portland, Oregon.

A McNutt.

The Schrodinger-Newton System with Self-Coupling.

Reed Physics Seminar, September 18, 2013, Reed College, Portland, Oregon.

V Gopalaswamy, **A McNutt**, A Morgan, C Proepper.

Professional Experience

Uber

Data Visualization Engineer II *October 2015 to May 2017*

Worked as a embedded front-end visualization developer on a variety of teams and platforms. A few essential projects included a WebGL based map and charting visualization systems that allowed users to dynamically interact with millions of rows of data across a variety of formats, an analytics platform for monitoring the health and business outcomes of AB testing experiments, and a system for visualizing simulations about Vertical Takeoff Landing devices. Acted as the lead maintainer for an open source charting library [React-Vis](#), which during my tenure gained over thousands of Github stars.

Collaborative Drug Discovery

Scientific Visualization Developer *November 2014 to October 2015*

Acted as a software developer on a wide variety of projects on all ends of a Rails based stack. Founded and ran a lunch and learn collaborative educational program for the team. Selected projects include: optimizing machine learning protocols, a visualization platform for high dimensional drug discovery data, and technical writing and research for scientific publications.

Reed College

Research Assistant *May 2013 to August 2013*

Studied computational simulations of Quantum Gravity as part of Joel Franklin's research group. Worked in collaboration with a research team to construct a coherent set of numerical solutions to the coupled Newton-Schrodinger with self-interaction problem. Specialized in the development of bound states for this system. Developed parallel model for the Klein-Gordon system. These efforts culminated in a paper published in the Journal of Classical and Quantum Gravity.

Physics Computation Lab Manager *August 2012 to May 2013*

Selected by faculty to manage a Mac based computation cluster. Duties included management of software updates and other technical issues. Assisted other students with research that required the use of parallel systems. Principle technologies included Grid Mathematica and Radmind.

Teaching Experience

University of Chicago

Teaching Assistant *September 2017 to Present*

CMSC 12100 - Computer Science with Applications 1. Duties included teaching a weekly computation lab, grading assignments, vetting assignments and labs, and offering hands on one on one help in office hours. Languages and libraries covered: Python, NumPy, Pandas.

CMSC 15100 - Introduction to Computer Science 1. Duties included teaching a weekly lab, grading assignments. Languages and libraries covered: Racket

CMSC 23900 - Data Visualization. Primary teaching assistant. Duties included lecturing, constructing curricula, writing exams as well as homework and lab assignments, grading, running labs, holding office hours, and facilitating the construction of course outputs (such as printed posters). Languages and libraries covered: Javascript, d3.js, React, and auxiliary libraries in the react/d3 ecosystems.

Uber

Lecturer *October 2015 to May 2017*

Wrote curricula and taught weekly classes for new engineers about visualization, and offered a bi-weekly session for all new employees on effective data presentation. Both of these courses were exceptionally well-received, achieving average weekly audience satisfaction scores of $92 \pm 5\%$ (as compared to satisfaction scores in the low eighties for other frequent presenters).

F.L. Griffin Mathfest

Course Assistant *March 2014*

Selected by Reed college faculty to help lead a calculus based mathematics outreach program for high school students. Assisted in leading physical demos of various optical phenomena, as well as aided in student computation and introduction of concepts.

Reed College

Teaching Assistant *August 2012 to Jan 2013*

Physics 101 - General Physics I. Duties included administration and facilitation of course architecture and preparation of physical demos.

Certificates & Trainings

App Academy

August 2014 Cohort: Perfect Score

A highly selective (less than 5% acceptance rate) full stack web development course that covered Ruby, Javascript, Backbone.js, and Ruby on Rails.

Skills & Technologies

<i>Web Dev</i>	d3, Processing, webGL, React, Flux/Redux, Node, Backbone.js, jQuery, SCSS/Sass, SQL (mySQL & postGRES), Ruby, Ruby on Rails, Python, Flask
<i>Scientific Computing</i>	Mathematica, Grid Mathematica, Numpy, Pandas
<i>Other</i>	Latex, Omnigraffle, Photoshop, Sketch