Henry Steinitz CV

Contact

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github.com/henrysteinitz

Coursework

Real & Complex Analysis
Abstract Algebra
Point-set Topology
Algebraic Topology
Differential Geometry
Mathematical Logic
Computability Theory
Complexity Theory
Algorithms
Quantum Computing
General Relativity
Machine Learning
Statistics
Neuroscience

Other Skills

LaTex
Python
C / C++
Java
Javascript
Haskell
TensorFlow
Matlab

Education

University of Chicago — **B. S. in Mathematics with Honors**
- First-generation college student.
- Received the Odyssey scholarship for students from lower-income families.
- Dean's List all four years.

Research

University of Chicago REU — Summer 2013
- Wrote a survey of results in algorithmic randomness based on *Algorithmic Randomness and Complexity* by Downey and Hirschfeldt. (http://www.henrysteinitz.com/steinitz-2013.pdf)

Teaching

Young Scholars Program — September 2012 - June 2013
- Taught advanced middle school students topics in number theory and geometry.

Private Tutor — September 2015 - Present
- I teach math, physics, and computer science to college and advanced high school students.
- Earned an average 5 star rating on the tutoring platform WyzAnt based on 31 ratings. (wyzant.com/match/tutor/86214023)

Work Experience

Software Engineer, Factr — December 2016 - Present
- Factr is an application that allows people to aggregate and understand specialized streams of information.
- I'm one of two full-time engineers developing the system which involves working across a frontend, backend, and machine learning codebase.
- I've used the tools that we've built to monitor mathematics research. (factr.com/stream/aesthetics-in-structure)

Fundraiser, Oxfam — February 2016 - March 2016
- Canvassed in New York City to raise money for Syrian refugees.
- Raised around $5,000 (estimated based on average length of donor memberships)

Programming Projects

Cajal — github.com/henrysteinitz/cajal
- Computational graph library written in Python with NumPy.
- Inspired by similar libraries like TensorFlow and Theano, current features include a simple implementation of general backpropagation, gradient descent, and L2 regularization.

Neural Turing Machine — github.com/henrysteinitz/neural-turing-machines
- Implementation of Graves et al. 2014 in TensorFlow.

Multilayer Perceptron Visualizer — henrysteinitz.com/neura
- A simple javascript application that randomly generates data based on a provided boolean relation, which is then used to train and visualize an MLP.
- The magnitude of the strength of each weight determines the thickness of the edges in the architectural graph. The user can then provide test inputs and watch information flow through the network. Training networks multiple hidden layers nicely visualizes the problem of exploding / vanishing gradients.