

# Daniel McNeela

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## EDUCATION

### UC BERKELEY

B.A. IN APPLIED MATHEMATICS

FOCUS IN COMPUTER SCIENCE

College of Letters and Sciences

May 2017 | Berkeley, CA

## LINKS

Github:// [mcneela](#)

LinkedIn:// [daniel-mcneela](#)

Blog:// [mcneela.github.io](#)

## COURSEWORK

Algorithms

Data Structures

Machine Learning

Special Topics in Deep Learning

Topology and Measure Theory

Neural Computation

Numerical Analysis

Mathematical Logic

Computational Linguistics

NLP Research Seminar

Honors Multivariable Calculus

Honors Linear Algebra and Differential

Equations

Honors Abstract Algebra

Real Analysis

Complex Analysis

Advanced Linear Algebra

Structure and Interpretation of Computer

Programs

Introductory Neuroscience

## TECHNICAL SKILLS

### HIGH LEVEL

Machine Learning • Data Science

Deep Learning • NLP • Technical Writing

Data Analytics & Visualization

### PROGRAMMING

Languages

Python • R • Matlab

Java • C++ • Bash

Packages

Pytorch • Tensorflow • Numpy

Scikit-learn • Matplotlib

Tools

Git • Vim

## EXPERIENCE

### MACHINEVANTAGE | MACHINE LEARNING RESEARCHER

- Applying ML and Deep Learning techniques to novel research problems in NLP.

### GOOGLE SUMMER OF CODE 2016 | SOFTWARE ENGINEER INTERN

- Worked with the International Neuroinformatics Coordinating Facility to develop tools for scientific visualization using Matplotlib and Plotly.
- Rewrote the core module using object-oriented principles, paring thousands of lines of code down to an equivalent few hundred.
- Implemented and created visualizations of a variety of neural computational models such as the Hopfield Network, Restricted Boltzmann Machine, and McCulloch-Pitts Neurons.
- Implemented the Sammon Mapping non-linear dimensionality reduction algorithm, and provided visualizations for the Locally Linear Embedding and related algorithms.
- Wrote clear, robust documentation of the package API.

### ELITE EDUCATIONAL INSTITUTE | MATHEMATICS INSTRUCTOR

- SAT, ACT, ISEE, and AP exam preparation.

### UC BERKELEY COMPUTER SCIENCE DEPARTMENT | COURSE READER AND TUTOR

- Graded assignments, provided instruction, and prepared teaching materials. Led weekly supplemental course sections, and assisted in the development of section teaching materials.

## PROJECTS

### DEEP LEARNING PROJECT | PYTHON, KERAS, TENSORFLOW

Developed Spring 2017

- Project for CS 294-131: Special Topics in Deep Learning
- I am investigating the use of LSTMs and Neural Attention Models applied to the dual tasks of generating automatic documentation of Python code and generating working Python code from natural language descriptions of program behavior.

### MACHINE LEARNING TUTORIALS | PYTHON, R

- A series of Machine Learning tutorials featuring implementations of various ML algorithms and models in Python and R. Click on a model name below to view its corresponding tutorial.
- Gaussian Mixture Models
- Universal Approximation Theorem
- LDA/QDA
- Logistic Regression
- Linear Regression
- Feedforward neural networks
- Decision Trees and Random Forests
- $k$ -means clustering
- Hopfield Networks
- McCulloch-Pitts Neuronal Models