Patrick Yu

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EDUCATION

University of California, Berkeley Aug 2017 – Present
Computer Science Major Technical GPA: 3.5

- Relevant Coursework:
  Data Structures, Designing Information Devices and Systems, Efficient Algorithms and Interactable Problems, Introduction to Artificial Intelligence, Optimization Models and Applications, Ideas in Computer Architecture

PROJECTS

Bear Maps April 2018

- Created a web mapping application using Java that allows users to search for locations around Berkeley on a map, including the option to zoom onto different map locations by reselecting pixels on display.
- Uses Map Rastering to convert the information on a map to a pixel-by-pixel image and uses shortest path algorithms, such as A* and Dijkstra's, to find the optimal path between two locations.

Machine Learning Design December 2018

- Built a multi-layer neural network in Python to solve a variety of machine learning problems, including linear and nonlinear regression, handwritten digit classification, and language identification.
- Neural net uses batch gradient descent to minimize square loss on multiple layers separated by the ReLU function to approximate the sin function with given data and classify digits from the MNIST dataset.
- Recurrent Neural Net is used to identify the language of a given word by implementing a hidden set of layers to summarize the list of characters into a set of nodes that are applied with the ReLU function.

EXPERIENCE

Code Coach October 2018 - Present

- Works at The Coder School Berkeley as a Code Coach, teaching students from ages 7-18 the basics of coding and exploring the various applications of programming.
- Guide beginner students through creating games and projects with Scratch and Snap, building up core ideas of coding including conditional statements, loops, variables, and problem solving.
- Work with advanced students to explore the fundamentals of Python, create and design websites with HTML/CSS, learn the basics of Java, and apply all related ideas towards problem solving and algorithm design

Academic Intern Jan 2018 – May 2018

- Helped students in CS61A: *Structure of Computer Programs* during labs and office hours by assessing the students' understanding of material with weekly lab check-offs and guiding students through difficult problems.
- Assisted the TA with preparing material to build students' knowledge of the curriculum, covering topics such as higher-order functions, recursion, trees, and memory/runtime.

Boy Scouts Jun 2010 – Present

- Received the Eagle Scout Award, the highest possible award attainable as a Boy Scout.
- Led my own Eagle Project, an activity that is designed to bring a positive change to society and required optimizing the assignment of tasks and focusing on safety, time management, and limiting the use of resources.

EXTRACURRICULARS

AFX Dance Jan 2018 – Present

- Joined the AFX Dance club in UC Berkeley, which requires multiple practices a week and performances.

Science Fair Aug 2013 – June 2016

- 2nd place at the 2015 Texas State Science and Engineering Fair.
- Semifinalist in the 2015 Siemens Science Fair Competition. *Design and* Experimental *Study of Flapping Wings for Micro Aerial Vehicles*

SKILLS AND INTERESTS

Skills: Python, Java, C, SQL, Scratch, LaTeX, Microsoft Office
Languages: Advanced Conversational and Written Mandarin Chinese