Michael Zhu

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EDUCATION

University of California, Berkeley **Berkeley, CA**

- Bachelor of Arts in **Computer Science** Aug 2019 - Present
- SCET Certificate of Entrepreneurship and Technology GPA: 3.9
- Coursework: algorithms, data structures, computer architecture, iOS development, artificial intelligence, reinforcement learning, circuit design, discrete mathematics, probability, amateur radio

EXPERIENCE

UC Berkeley EECS Department **Berkeley, CA**

Teaching Assistant, CS-198 iOS Development August 2020 – Present

- Prepare lecture, lab, and project materials in Swift; hold weekly lab sections and office hours; manage online forum
- Developed COVID data tracking application as lab assignments; transitioning course material from UIKit to SwiftUI

Ludwig AI **Berkeley, CA**

Software Developer June 2020 - Present

- Worked on an empirical comparative analysis of deep learning models on the Stanford Sentiment Treebank dataset
- Achieved state of the art performance on both SST2 dataset and SST5 dataset using LSTM, parallel CNN, and BERT
- Produced Colab notebook tutorial on how to use Ludwig's open source python package for deep learning with NLP

Space Technologies at Cal (STAC) **Berkeley, CA**

Autonomous Rover Team August 2020 – Present

- Using Docker, Gazebo, ROS, and OpenAI Gym to simulate extraterrestrial surfaces and deploy robotic algorithms
- Currently working on perception stage using convolution neural networks for localization and landmark detection
- Currently working on planning stage using trajectory optimization and reinforcement learning methods

UC Berkeley Residence Hall Assembly **Berkeley, CA**

Student Representative for Unit 2 Towle Building August 2019 – May 2020

- Finance and Operations Committee (Spring): manage the residence hall budget and evaluate cash allocation for events
- Internal Affairs Committee (Fall): wrote bills to improve RHA bylaws and proposals for on-campus events
- ToCu Hall Association: Organized events for Towle and Cunningham buildings such as Thanksgiving Destress with Hot Cocoa in November 2019, Winter Gratitude Grams in December 2019, and social media quarantine challenges

PROJECTS

Statfinder: Bag-of-Words and TF-IDF techniques for data extraction of websites **Aug 2020**

- Used Flask and Python to create REST API that accepts URL input and returns list of relevant statistics from that site
- Used React to develop frontend website that queries REST API and displays output **(statfinder.herokuapp.com)**
- Work in progress: Using PyPDF to extend application for PDF files and other text-based file types

Crowd Insights: Real-time Computer Vision and Graph Algorithms to Analyze Crowds (TreeHacks) **Feb 2020**

- Used Pytorch to develop a real-time human detection and clustering algorithm that analyzes top-down videos of crowds
- Accomplished 30 FPS real-time analysis on live video feeds by utilizing Flask API, Google Cloud Compute, and Firebase
- Geospatial Grand Prize winner and top 8 finalist out of 200 teams (devpost.com/software/crowd-insights)

OskiBot: Course recommendation chatbot for UC Berkeley students (CalHacks) **Oct 2019**

- Created chatbot that recommends courses to UC Berkeley students based on major and breadth requirements
- Built with Node.js and Cisco Webex; used Microsoft Azure to host application; used Google Firebase to store course info
- Won CalHacks 6.0 Cisco API Challenge and Major League Hacking Transposit API Challenge

Blindsight: Image recognition and voice assistant for the visually impaired **May 2018**

- Created assistive wristband for the visually impaired using Raspberry Pi camera module to help patients "see" objects
- Implemented voice assistant features on an Android application to optimize user experience for blind users
- Won 1st Place out of 120+ competing teams at the 2018 Dublin Entrepreneurship and Technology Showcase

SKILLS

- Languages: Python, C/C++, Java, Assembly (RISC-V), SQL, Swift, HTML, CSS, Javascript
- Technologies: React, Node, Firebase, Flask, Numpy, Pandas, Scikit-learn, Tensorflow, Pytorch, Docker, Git