# Michael Zhu

michaelbzhu@berkeley.edu | (925) 577-0807 | michaelbzhu.github.io | linkedin.com/in/michaelbzhu

## EDUCATION

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

- Bachelor of Arts in **Computer Science with Honors** Aug 2019 - Present
- SCET Certificate of Entrepreneurship and Technology GPA: 3.9
- Coursework: algorithms, data structures, computer architecture, artificial intelligence, deep neural networks, reinforcement learning, discrete mathematics, probability, signal processing, iOS development

## EXPERIENCE

**Amazon,** *Incoming Software Development Engineering Intern* **Starting May 2021**

**UC Berkeley CS 198 (iOS Development),** *Lead Facilitator* **August 2020 – Present**

- Prepared lecture, lab, and project content in Swift; hold weekly lab sections and office hours
- Supervising 3 teaching assistants; led curriculum rebuild from UIKit to SwiftUI framework

**UC Berkeley EECS 16B (Designing Information Systems),** *Lab Tutor* **January 2021 – Present**

- Review lab materials; assist students during lab sections with debugging and concept checks

**Ludwig AI,** *Software Developer* **June 2020 - Feb 2021**

- Performed comparative analysis of deep learning models on the Stanford Sentiment Treebank dataset
- Used hyperparameter optimization to achieve state of the art performance with a Bi-LSTM model
- Wrote accompanying article on how to use Ludwig's deep learning toolkit to reproduce our project
- Continuing contributions in bug fixes and new features to Ludwig's open source python library

**Berkeley Poker Club,** *Director* **Jan 2021 - Present**

- Organized the first annual Berkeley Poker Tournament with 70 participants and a $2000 prize pool
- Led workshops on fundamental poker concepts, invited guest speakers, and ran local cash games

## PROJECTS

**Improving Free Adversarial Training using Scheduling, Augmentations, and Denoising** **April 2021**

- Improved ResNet-18 performance on geometric perturbations by 16% by applying weighted contrastive loss
- Improved adversarial example test accuracy by 14% using scheduled adversarial training and denoising
- Novel contributions include implementation of denoising network, scheduling to optimize impact of adversarial training, and applying a combined cross-entropy loss with weighted contrastive loss factor

**Ugly Video: Browser based video conferencing with WebRTC** **Feb 2021**

- Used WebRTC and Peer.js to implement real time video and audio streaming between browsers
- Used Fabric.js to implement image sharing and synchronous whiteboard features
- TreeHacks 2021 Funniest Hack winner and top 20 finalist out of 224 teams; demo at **https://ugly.video**

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

- Used Flask to create REST API that accepts URL input and returns list of relevant statistics from that site
- Used React to develop frontend that queries REST API and displays output at **statfinder.herokuapp.com**

**Crowd Insights: Real-time computer vision and graph algorithms to analyze crowds** **Feb 2020**

- Accomplished 30 FPS real-time analysis on live video feeds by utilizing Pytorch, Flask, and GC Compute
- TreeHacks 2020 Geospatial Grand Prize winner and top 8 finalist out of 200 teams

**OskiBot: UC Berkeley course recommendation chatbot** **Oct 2019**

- Created chatbot that recommends UC Berkeley courses using Node, Webex, Azure, and Firebase
- Won CalHacks Cisco API Challenge and Major League Hacking Transposit API Challenge awards

## SKILLS

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