chris.powers@berkeley.edu
+1(510) 944-9857

Chris Powers

www.linkedin.com/in/chris-powers
https://github.com/ChrisP19

EDUCATION

Master of Electrical Engineering and Computer Science, University of California Berkeley May 2020

- **Courses:** Deep Reinforcement Learning, Advanced Robotics, Computer Graphics, Real Analysis, Complex Analysis

Bachelor of Electrical Engineering and Computer Science, University of California Berkeley May 2019

- 3.91 GPA; High Honors; Dean's List; member of EECS Honor Society (HKN)
- **Courses:** Data Structures, Algorithms, Operating Systems, Computer Security, Machine Learning, Artificial Intelligence, Deep Neural Networks, Optimization Models, Probability, Signals and Systems, Feedback Control

EXPERIENCE

Yelp Software Engineering Intern: Summer 2018

- Designed and built new intuitive ads cancellation flow from the ground up while retaining key functionality
- Made it easier for thousands of advertising Yelp business users to redeem promotional offers
- Full stack development with React and Redux frontend and Python backend on the business monetization team

RESEARCH

Berkeley Deep Drive with Professor Trevor Darrell Fall 2018-Present

Collaborative Image Annotation:

- Enabled real time, robust synchronization between users simultaneously labeling the same set of images
- Managed team of four undergraduates in updating open source codebase from Go to Node.js/Typescript

Scalable Model Serving:

- Sent users' annotations to computer vision models and returned predicted labels to assist users on next image
- Set up network of AWS servers, using Ray for autoscaling and GRPC for communication between Python and Go

UC Berkeley Automation Lab with Professor Ken Goldberg June 2016-May 2018

Automated Object Sorting:

- Designed robust method for decluttering a pile of objects and sorting the objects into categories. Used it with HSR and Fetch robots to compete in the TRI hackathon (1^{st}) and the Siemens FutureMakers Challenge (2^{nd})
- Method was based on PCA and connected component analysis and built with OpenCV, Sklearn, NumPy, and SciPy

Web Labeling Tool:

- Allowed user to control robot in real time via remote web interface; used Pyro to link parallel Python processes
- Integrated with Amazon Mechanical Turk crowd-sourcing platform in Javascript frontend

Bed Making Robot:

- Applied Imitation Learning in Tensorflow to teach a Toyota HSR home robot how to make a bed
- Boosted performance with data augmentation, and evaluated performance with OpenCV contour detection

PROJECTS

Deep Image Colorization: Spring 2019

- Used Pix2Pix conditional GAN in Keras to colorize images, and implemented transfer learning between datasets

Piano Playing Robot: Fall 2018

- Improved standard ROS path planning to achieve clear sounding notes and allow two hands to play simultaneously
- Used OpenCV to compute 3D poses of piano keys from a camera image taken from the Baxter robot's moving arm

Music Transcription: Spring 2018

- Extracted sheet music from audio waveform using Fourier analysis and heuristics to segment and classify notes

Pacman Artificial Intelligence: Spring 2017

- Created Q-learning A.I. agent in Python that won first place in player vs. player contest in class of 400 students

SKILLS

Languages: Python, Javascript, C, Java, Golang, Unix scripting, Typescript, HTML/CSS,

Tools: Tensorflow, AWS, React, Redux, Node, Keras, OpenCV, NumPy, Git, Ray, ROS, Pyro, WebSocket, SciPy, Sklearn