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Chris Powers

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EDUCATION
Aug. 2015-May 2019

University of California, Berkeley BS Electrical Engineering and Computer Science (GPA: 3.9)

Courses: Data Structures, Algorithms, Machine Learning, Artificial Intelligence, Operating Systems, Computer Security, Machine Structures, Probability and Random Processes, Signal and Systems, Optimization Models, Robotics

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

EECS Honor Society Officer:
Fall 2017
- Instructor for freshman seminar that surveyed EECS topics ranging from circuits and fabrication to security and AI

ULAB Mentor:
Spring 2017
- Mentored team of 4 freshman on their research to design an automated weed-killing robot

RESEARCH

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

Web Interface:
- Designed web interface for demarcating and labeling objects in images taken by the robot in real time
- Enabled communication between server and robot, and integrated with crowd-sourcing platform

Computer Vision:
- Implemented data augmentation algorithms to increase the effectiveness of limited image data
- Built custom vision tools, including contour detection to evaluate robot performance, using OpenCV

Deep Learning for Robotics:
- Applied Imitation Learning to teach a home robot bed making and an industrial robot part separation
- Used Tensorflow to implement cross validation over neural network architectures and parameters

Object Sorting System:
- Constructed reliable system by integrating web interface, image processing tools, and pile separation algorithms
- Operated on legos in the TRI hackathon and on machine shop parts in the Siemens FutureMakers Challenge

Publications:
- Laskey, M.; **Powers, C.**; Goldberg, K. "High Dimensional representations for Learning Grasping in Clutter Policies from Demonstrations." RSS Conference. 2017

PROJECTS

Piano Playing Robot:
Fall 2018
- Improved standard path planning to achieve clear sounding notes and allow playing with two hands simultaneously
- Created algorithm to compute 3D positions of piano keys from a camera image taken from the moving robot 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 A.I. agent that won first place in player vs. player contest in class of 400 students
- Used Q-Learning, probabilistic inference, and hidden models to calculate best move with incomplete information

SKILLS

Programming: Python, Javascript, C, Java, Unix scripting, Robot C, SQL

Software: React.js, Redux.js, Tensorflow, OpenCV, NumPy, Git, Flask, OpenMP, HTML/CSS