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Chris Powers

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EDUCATION

Aug. 2015-May 2019

University of California, Berkeley
EECS undergraduate (GPA: 3.848)
Courses:

- Data Structures
- Algorithms
- Machine Learning
- Artificial Intelligence
- Discrete Math and Probability Theory
- Operating Systems
- Machine Structures
- Designing Information Devices & Systems
- Linear Algebra and Differential Equations
- Microelectronic Devices and Circuits

RESEARCH

June 2016-Present

UC Berkeley Automation Lab under Professor Ken Goldberg
Designed algorithms for ABB YuMi robot:

- Built a computer vision library using OpenCV and Python, including implementing image segmentation algorithms
- Synthetically augmented image datasets to teach robot to pick up silverware and tie a rope

Used machine learning for Toyota HSR robot:

- Tested neural net architectures in Tensorflow and analyzed experiment statistics on Tesla K40 GPU
- Taught robot to clear a path to target object in shelf, using kinetic pose estimation network adapted to Python

Created a real time web GUI:

- Used Javascript/HTML/CSS to design web interface for labeling images taken by the robot in real time
- Enabled communication between server and robot, and integrated with Amazon crowd-sourcing platform

Publications:

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

EXPERIENCE

EE16B Course Staff: Feb 2017-Present

- Graded and improved content for Designing Information Devices & Systems course

ULAB Mentoring: Spring 2017

- Volunteered for ULAB, a program that increases diversity in STEM research
- Mentored Berkeley freshman on their research to design an automated weed-killing robot

EECS Honor Society Officer: May 2017-Present

- Facilitated class that introduces freshman and transfer students to a wide variety of EECS topics

PROJECTS

Parallel computing: Used OpenMP in C to parallelize an image compression program for 5x speedup
Robotics: Built, wired, and programmed mobile robot that responds to voice commands
Software: Created web-based geographic mapping application in Java
Artificial Intelligence: Created player vs. player Pacman A.I. that placed first in class contest

SKILLS

Programming: Python, Java, C, Javascript, Unix scripting, Robot C, SQL
Software: Tensorflow, OpenCV, HTML/CSS, Flask, NumPy, OpenMP
Interests: Japanese language, gaming, chess, mobile apps