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Chris Powers

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Education

M.S. Electrical Engineering and Computer Science, University of California Berkeley (4.0 GPA)   May 2020
- **Courses:** Deep Reinforcement Learning, Advanced Robotics, Computer Graphics, Real Analysis, Complex Analysis

B.S. Electrical Engineering and Computer Science, University of California Berkeley (3.91 GPA)   May 2019
- 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

Datu Machine Learning Systems Lead   January 2020-Present
- Systems lead responsible for mentoring interns, translating business requirements to engineering design documents, and planning feature roadmaps.
- Designed micro service architecture that formed the core of our machine learning platform. Used MongoDB, Amazon S3, and Redis for storage, and GRPC and HTTP for communication. Deployed production version on Amazon EC2.
- Built user-facing frontend from scratch, using Material UI/React/Redux to make streamlined dashboards and flows.

Yelp Software Engineering Intern   Summer 2018
- Full stack development with React and Redux frontend and Python backend on the business monetization team.
- 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.

Research

Berkeley Deep Drive with Professor Trevor Darrell   Fall 2018-May 2020
- Led four undergraduates to revamp open source image annotation tool Scalabel, implementing real time collaboration between users and adding support for interactive model-assisted labeling with PolygonRNN++.
- Deployed Go and Python servers on AWS cloud, using Ray for autoscaling and GRPC for communication.

UC Berkeley Automation Lab with Professor Ken Goldberg   June 2016-May 2018
- Developed robotic decluttering algorithm, using OpenCV and Sklearn to segment objects in a pile then using PCA to identify the optimal push trajectory. Came in 1st in TRI hackathon and 2nd in the Siemens FutureMakers Challenge.
- Applied Imitation Learning in Tensorflow to teach a robot how to make a bed. Took initiative to improve the data collection process by building a remote web interface that let users control the robot in real time.

Projects

Snowsim   Spring 2020
- Implemented a realistic and performant snow simulation and visualization in C++ using the material point method.

Reinforcement Learning for Distributed Scheduling   Fall 2019
- Simulated a cluster with limited resources using real world server logs to model the distribution of incoming jobs.
- Combined policy gradient and actor critic methods with a DAgger baseline to beat the Shortest Job First heuristic.

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.

Skills

Languages: Python, Typescript, Javascript, C, C++, Java, Golang, Unix scripting, HTML/CSS
Tools: Tensorflow, Keras, PyTorch, OpenCV, React, Redux, Node.js, Flask, MongoDB, GRPC, AWS, Docker, Git, WebSocket