

Owen Jow

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Education

University of California, Berkeley

Berkeley, CA

BACHELOR'S IN COMPUTER SCIENCE

August 2014 - PRESENT

- Relevant courses: Computer Vision*, Deep Neural Networks*, Probability*, Computational Design and Fabrication*, Deep Reinforcement Learning, Special Topics in Deep Learning, Optimization Models in Engineering, Computer Graphics, Advanced Computer Graphics, Algorithms, Machine Learning, Image Manipulation & Computational Photography, Artificial Intelligence, Operating Systems, Database Systems, 3D Modeling & Animation, Data Structures, Linear Algebra
- GPA: 3.8 (some form of A in all completed courses listed above)

* *in progress*

Experience

Robot Learning Lab (Prof. Pieter Abbeel)

Berkeley, CA

UNDERGRADUATE RESEARCHER

June 2016 - PRESENT

- Developed a system for complex, autonomous robot control by means of a neural network trained to imitate VR demonstrations.
- Worked on the platform for learning from demonstration (LfD) as well as the VR interface for robot teleoperation.
- Publications: *Deep Imitation Learning for Complex Manipulation Tasks from Virtual Reality Teleoperation* (to be presented at ICRA '18)

UC Berkeley EECS Department

Berkeley, CA

UNDERGRADUATE STUDENT INSTRUCTOR

August 2015 - PRESENT

- Served as a teaching assistant for CS 61A (programming paradigms) and CS 170 (efficient algorithms), and as a reader for CS 194-26 (computational photography).
- Worked with professors and other TAs to create course content such as exams and section worksheets.
- Led weekly discussions, labs, and office hours.

Highlighted Projects

Occlusion-Aware Multi-Object Viewpoint Prediction | Python, TensorFlow

September 2017 - PRESENT

- A learning-based method for predicting novel views (and depth information) given a desired viewpoint and a single RGBD view of a scene with several objects occluding each other.
- Uses a fully convolutional encoder-decoder architecture to process the RGBD input, plus some dense layers to process the viewpoint.
- By combining the depth maps generated over multiple views, we can use this method to reconstruct the 3D geometry of a scene.

Deep Blue and Gold | Python, TensorFlow

April 2017 - PRESENT

- Chess engine capable of either emulating a certain style of play (using an evaluator network trained with supervision data) or playing as optimally as possible (using an evaluator network trained with temporal difference reinforcement learning).
- For move selection, uses minimax with various extensions (e.g. quiescent search and probability-based termination).

Single View Modeling | Python, OpenGL

December 2016

- PyOpenGL realization of the "tour into the picture" algorithm, complete with a GUI for selecting points and walking through scenes.
- In its current incarnation, the program is able to take in a one-point perspective image and reconstruct a 3D model of its content.

Lens Simulator | C++

March 2016 - April 2016

- Path tracing, where rays are refracted according to an input lens model. Supports contrast-based autofocus.
- At its core: a physically-based renderer built upon a large number of ray intersection tests, acceleration using a BVH, Russian roulette methods for secondary ray termination, and reflection/refraction computation for different materials.

Skills

LANGUAGES, LIBRARIES, AND FRAMEWORKS

Python, C++, TensorFlow, Java, OpenGL, JavaScript, C, ROS, C#, Unity, Android, Ruby on Rails, Django

SOFTWARE Adobe Photoshop, Adobe Animate CC, Autodesk Maya