Peter Cheng

peter@pcheng.me
503-901-8358

Selected Work Experience

Zipline: Perception Engineer (2023 - Present)

Iron Ox: Staff Computer Vision Engineer (2020 - 2023)

- Built multi-camera imaging stations to capture thousands of plants in 2d and 3d
- Used 3d plant scans in conjunction with environmental sensors to predict future plant growth for yield and sales forecasting
- Augmented pest management procedures with automatic detection of pests and diseases
- Managed all camera systems and calibration routines for cameras and lidars

Matterport: Staff Computer Vision Engineer (2015 - 2020)

- Trained semantic segmentation models for spherical images (used in Matterport Cortex)
- Developed significant portions of the image processing pipeline, making us competitive for real estate photography (e.g. demosaicing, hdr tonemapping, color constancy)
- Implemented poisson and voxel-based approaches for surface reconstruction and completion
- Sensor/lens modeling, calibration, and live correction for color and structured light systems
- Systems-level design for Pro 1 and Pro 2, including camera architecture, wifi, gps, etc.

Amazon Lab126: Emerging Technologies Team (2013 - 2014)

- Machine learning models for motion gesture recognition on the Fire phone
- Wrote software and ran studies to quantify accuracy and usability of 3d and gesture-based interfaces

Education

M.S. Computer Science, UC Berkeley (2012 - 2013)

- GPA 3.889, High Honors

Management of Technology Program, Haas School of Business (2012)

- 1 year of MBA coursework alongside entrepreneurship projects

B.S. Electrical Engineering and Computer Science, UC Berkeley (2009 - 2012)

- GPA 3.835, High Honors

Academic Research

Video and Image Processing Lab: Dr. Avideh Zakhor (2011 - 2013)

- Generated textured meshes of building interiors using backpack-mounted cameras and lidar
- Trained machine-learning models on generated assets for energy modeling and prediction

Vision Sciences Lab: Dr. Christine Wildsoet (2011)

- Analyzed data from eye-tracking devices to study effect of sunlight on myopia

Publications

IEEE Journal of Selected Topics in Signal Processing (2014)

- Fast, Automated, Scalable Generation of Textured 3D Models of Indoor Environments

SPIE Computational Imaging (2013)

- Texture mapping 3D models of indoor environments with noisy camera poses

Technical Skills

- Languages: C++, Python
- Frameworks/Libraries: OpenCV, PyTorch, ROS, OpenCL, Ceres.