Peter Cheng

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Work Experience

Matterport: Computer Vision Engineer (2015 - current)

- TSDF voxel-based approaches for meshing and surface completion, deployed on object-scale, interior, and city-wide datasets
- Sensor and lens modeling, calibration, and live correction for RGB and structured light systems
- GPU-optimized image processing, including robust HDR composition, demosaicing, and denoising
- Depth post-processing for Lidar and structured light, including infilling, sharpening, and motion handling
- Systems-level development and integration for wifi, usb, motor controllers, etc. enabling optimal capture and processing

Amazon Lab126: Emerging Technologies (2013 - 2014)

- Created machine learning models for motion gesture recognition
- Designed user interaction patterns based on gesture controls and perspective-dependent interfaces
- Developed metrics and testing frameworks to quantify accuracy and usability for recognition models and user interfaces
- 11 patents filed for user interaction concepts and technologies

UC Berkeley Student Affairs IT: Lead Desktop Engineer (2011 - 2012)

- Hired and led a team to provide Tier 1-3 support for over a thousand campus employees

Arista Networks: Software Development Intern (2011)

- Implemented the DHCP relaying module for Arista's networking OS

Education

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

- GPA 3.889, High Honors

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

- Completed 2 semesters of MBA courses and 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 3d models of indoor areas using a backpack-mounted system consisting of cameras, lasers, and inertial sensors
- Trained models to detect windows and lights towards producing interior energy models

Vision Sciences Lab: Dr. Christine Wildsoet (2011)

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

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Publications

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

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Technical Skills

- Languages: (Proficient) C++, Python, (Familiar) Java/Android, Matlab
- Libraries: OpenCV, OpenCL, OpenNI, Ceres, Video4Linux2