YOU-YI JAU

Computer Vision and Robotics · SLAM · Deep Learning · Perception

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Education

University of California San Diego (UCSD) – Jacobs School of Engineering *La Jolla, CA. USA*

M.S. in Electrical and Computer Engineering | GPA: 3.79/4.0 – Thesis *Exp. Jun. 2020*

- **Courses:** Advanced Computer Vision, Statistical Learning, Convex Optimization, Software Engineering - Ubiquitous Computing, Digital Signal Processing, Filter Banks and Wavelets
- **TA:** Sensing and Estimation for robotics, Digital Image Processing, Introduction to Intelligent Systems

National Taiwan University (NTU) *Taipei, Taiwan*

B.S. in Electrical Engineering | GPA: 4.14/4.3 *Sep. 2013 - Jan. 2018*

- **TA:** Calculus

Skills

Programming Python – pytorch/ Keras/ Tensorflow, C++, Matlab

Platforms Robot Operating System (ROS), Arduino

Experiences

Research Assistant, Visual Computing in UCSD *La Jolla, CA. USA*

Deep Structure From Motion (SFM) *Oct. 2018 - Current*

- Designed end-to-end trainable framework for feature extraction, outlier rejection, and relative pose estimation, in submission for IROS 2020
- Implemented deep learning networks for feature detection or description in SFM pipeline, optimizing using self-supervised method
- Conducted experiments in KITTI and ApolloScape dataset, evaluating the generalization ability for different approaches

Research Intern, Autodesk research *San Francisco, CA USA*

Floorplan Reconstruction *Jun. 2019 - Sep. 2019*

- Researched deep learning module to reconstruct elements from images, extracting information from architecture designs
- Developed Revit python API to export floorplan images and labels for training, reconstructing walls for floorplans with different styles

Research Intern, AI Center at Inventec Corp. *Taipei, Taiwan*

Indoor Navigation *Jul. 2018 - Sep. 2018*

- Developed robotic control system under ROS framework, successfully achieving cloud training and evaluation
- Trained and tested models using CNN deep reinforcement learning in Tensorflow, reaching success under virtual environment

Software Development Intern, Dell Technology *Taipei, Taiwan*

Tool Development *Jul. 2016 - Aug. 2016*

- Designed the architecture of software tools, to speed up debugging process for server development
- Created debugging tools from back-end algorithm to front-end interface in python, in use for over 1 year

Projects

Feature-Preserving Image Denoising with Multi Resolution Filters *La Jolla, CA, USA*

Filter Banks and Wavelets *Sep. 2018 - Jan. 2019*

- Proposed a multi-resolution bilateral filter from filter bank perspective, benchmarking other baseline filters
- Evaluated filters under PSNR, SSIM, MSE and high-level feature matching metrics, achieving the best results against baselines

DreamBook - A Physical E-book *La Jolla, CA, USA*

Software Engineering - Ubiquitous Computing *Sep. 2018 - Jan. 2019*

- Innovated ideas using low-fidelity to high-fidelity prototyping, demoing our final product ”DreamBook” to the CSE department
- Managed the team of 5 using scrum framework, accomplishing the hardware design in R-pi3 and software design in python

Car Safety System *Taipei, Taiwan*

HackNTU Hardware Hackathon Competition *Mar. 2017*

- Invented system to reduce casualties in accidents within 24 hours, winning Enterprise Award from FET & Gatec
- Created prototype of safe car using wood, Arduino, and Linkit, exhibiting 3 features in demo

Publications

[1] Anonymous. Deep Keypoint-based Camera Pose Estimation with Geometric Constraints. In Submitted to Conference on Intelligent Robots and Systems (IROS), 2020. Under review.