Yi-Chun Chen

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EDUCATION

National Tsing Hua University (NTHU) GPA: 3.48/4.3 Last60 GPA: 3.83/4.3 Hsinchu, Taiwan
Bachelor of Science in Power Mechanical Engineering Sept. 2013 – June 2017

CAREER SUMMARY

One year's experience in deep learning and computer vision algorithm development, using Python and Pytorch.
One year's experience in robotics control and ground robot development.
Two years' experience in embedded system development on Raspberry Pi.

PROFESSIONAL EXPERIENCE

Dept. of Electrical Engineering, National Tsing Hua University Hsinchu, Taiwan
Vision Science Laboratory Research Assistant Feb. 2017 – Mar. 2018

- Devised a weakly supervised deep learning model using Pytorch to generate and describe salient viewpoints for automatic 360° videos visual guidance.
- Constructed a 2.5-D object detection model and prototyping a wearable vibrotactile-feedback device for a real-time guiding system that makes 83% visually impaired users confident in reaching objects.
- Invented an automatic ground-truth labeling technique to reduce the requirement of human efforts by 98% while building deep learning-based system.
- Improved average precision of normal field of view prediction from 19.2% to 27.8% and average recall from 8.3% to 12.8% with a 360° data augmentation technique.
- Evaluated robustness of weakly supervised model by defining new evaluation metrics and collecting first narrated 360° videos dataset.

HIWIN Technologies Corporation Taichung, Taiwan
Production Management Department Summer Intern Summer 2015

- Standardized operation procedures for manufacturing ballscrews to ensure the product quality.

PUBLICATIONS

Conference

Chou, S.-H.; **Chen, Yi-Chun**; Zeng, K.-H.; Hu, H.-N.; Fu, J.; Sun, M., Self-view Grounding Given a Narrated 360° Video, AAAI Conference on Artificial Intelligence (AAAI), 2018, New Orleans, U.S.A.

Chou, S.-H.; **Chen, Yi-Chun**; Sun, C.; Zeng, K.-H.; Cheng, C.-J.; Fu, J.; Sun, M., Towards Automatic Show-and-Tell in 360° Videos, European Conference on Computer Vision (ECCV), 2018, Munich, Germany. (Under review)

Shih, M.-L.; **Chen, Yi-Chun**; Tung, C.-Y.; Sun, C.; Cheng, C.-J.; Chan, L.; Varadarajan, S.; Sun, M. DLWV2: a Deep Learning-based Wearable Vision-system with Vibrotactile-feedback for Visually Impaired People to Reach Objects, International Conference on Intelligent Robots and Systems (iROS), 2018, Madrid, Spain. (Under review)

RESEARCH EXPERIENCE

Miniature Cell Sorter, NTHU Oct. 2015 – Oct. 2016

- Designed a real-time visual recognition system on microfluidic chip with Python and OpenCV to sort out circular tumor cells with 74% predictive accuracy of sorting silica particles of 10μm and 15μm in size.

SELECTED PROJECTS

Soccer Robot, 3rd Prize, NTHU Feb. 2017 – June 2017

- Developed path planning algorithm by implementing A* algorithm in MATLAB to avoid obstacles.
- Built PID controller for ROS-based robot to control speed of DC motors.

Autonomous Ground Robots, Ranked 7th out of 32, Eurobot, France Feb. 2016 – June 2016

- Established a real-time localization system using a laser rangefinder with C++ on Raspberry Pi for robots to optimize path planning.

SKILLS

Programming: Python, C/C++, MATLAB, Java
Libraries: Proficient: Pytorch, ROS, OpenCV
OS: Linux
3D Modeling: Inventor, AutoCAD