Chih-Hui (John) Ho

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Education

Sep. 2019 - Now **University of California San Diego, La Jolla, CA**.
PhD student in Electrical Computer Engineering

Sep. 2017 - Jun. 2019 **University of California San Diego, La Jolla, CA**.
M.S. in Computer Science, GPA: 3.87/4.0

Jan. 2016 - May 2016 **University of Illinois at Urbana-Champaign, Champaign, IL**.
Exchange student in Computer Science, GPA: 3.71/4.0

Sep. 2012 - Jun. 2016 **National Chiao Tung University, Hsinchu, Taiwan**.
B.S. in EECS Honor Program, GPA: 4.15/4.3

Research Interest

Computer Vision: Recognition, Multiview object classification, 3D understanding

Deep Learning: Metric learning, Adversarial attack, Self-supervised learning, Continuous learning

Publication

2020 Tz-Ying Wu, Pedro Morgado, Pei Wang, **Chih-Hui Ho**, Nuno Vasconcelos. Solving Long-tailed Recognition with Deep Realistic Taxonomic Classifier, In *European Conference on Computer Vision (ECCV)*, 2020

2020 **Chih-Hui Ho**, Bo Liu, Tz-Ying Wu, Nuno Vasconcelos. Exploit Clues from Views:Self-Supervised and Regularized Learning for Multiview Object Recognition, In *IEEE Conference on Computer Vision and Pattern Recognition (CVPR)*, 2020

2019 **Chih-Hui Ho**, Pedro Morgado, Amir Persekian, Nuno Vasconcelos. PIEs: Pose Invariant Embeddings, In *IEEE Conference on Computer Vision and Pattern Recognition (CVPR)*, 2019

2019 **Chih-Hui Ho**[*], Brandon Leung[*], Erik Sandstrom, Yen Chang, Nuno Vasconcelos, "Catastrophic Child's Play: Easy to Perform, Hard to Defend Adversarial Attacks", In *IEEE Conference on Computer Vision and Pattern Recognition (CVPR)*, 2019

2019 Jen-Hui Chuang, **Chih-Hui Ho**, Ardian Umam, HsinYi Chen, Mu-Tien Lu, Jenq-Neng Hwang, Tai-An Chen. A New Technique of Camera Calibration: A Geometric Approach Based on Principal Lines *https://arxiv.org/abs/1908.06539* , 2019. on-submission to IEEE Transaction on Image Processing (TIP)

2018 Yu-Shiuan Tsai, Yi-Yu Hsieh, **Chih-Hui Ho**, Ya-Ching Chang, Yao-Yuan Chang, Heng-Jyun Lin, Han-Yang, Wang; Yu-Chen Chou, Jen-Hui Chuang. âĂIJRule-Based Optical Character Recognition for Serial Number on Renminbi BanknoteâĂİ, In *IS&T Electronic Imaging 2018 (EI)* (oral presentation)

Academic Services

Reviewer WACV (2021), NIPS (2020), ACCV (2020), CVPR (2020), ECCV (2020) , ECCV Imbalance Problems in Computer Vision Workshop (2020), ICIP (2019, 2020)

Teaching Experience

UCSD ECE 271B Statistical Learning, ECE 271C Deep Learning and Applications

Professional Experience

Jan. 2018 - Now **Graduate Student Researcher, Statistical Visual Computing Lab, UCSD**.
Working on multiview recognition, 3D vision, self-supervised learning, structured embedding

Sep. 2017 - Dec. 2017 **Research Volunteer, San Diego Supercomputer Center**.
Reduced error of large scale operational facility data (200 GB) in scientific workflow by 23%

Nov. 2016 - Jun. 2017 **Research Assistant, NCTU Computer Vision Research Center**.
- Developed deep learning model for human activity analysis in aerial images
- Designed bill serial number recognition system with more than 99 % accuracy
- Developed camera calibration algorithm and implemented the algorithm into prototype
- Developed algorithm for automated optical inspection (AOI) for bobbin defects

Jan. - Dec. 2015 **Software Engineer Internship, Industrial Technology Research Institute**.
- Developed a prototype to calibrate robotic arm with an industrial camera
- Represented ITRI to attend 2015 Taiwan Automation Intelligence and Robot Show
- Received Mechanical and Systems Research Lab Prospective Project Excellence Award

Jul. - Aug. 2014 **Research Internship, Cornell University Advanced Multimedia Lab**.
Design algorithm to generate image collage based on emotional ROIs

Selected Projects

Jan. - Mar. 2018 **2018 Kaggle data science bowl**, *Keras*.
- Implemented image segmentation deep learning models for medical images
- Ranked top 18% in the competition

Nov. 2016 - Jun. 2017 **Deep learning based human activity analysis for aerial images**, *C*.
- Trained convolutional neural network to detect human with more than 91%
- Analyzed human behavior with principle component analysis and vanishing point

Nov. 2016 - Jun. 2017 **Assignment design for UIUC CS543 computer vision course**, *Matlab*.
- Implemented example code and designed example architecture to train Cifar 100
- Wrote deep learning tutorials and assignment walkthrough instructions on Kaggle

Jul. - Dec. 2013 **Human tracking mobile robots with Kinect**, *C++*.
- Identified userâĂŹs patterns with SIFT and GMM background subtraction algorithms
- Integrated depth sensor information, target user features and mobile robot control

Skills

Languages Python, C/C++ , MATLAB, C#

Library Pytorch, Tensorflow, Numpy, Pandas, Matplotlib, MatConvNet, OpenCV, Keras, LaTeX

Award

Spring 2019 UCSD graduate student association travel grant award

Jan. 2016 - May 2016 Full Scholarship as exchange student at UIUC

Jul. - Aug. 2014 Full Scholarship for an internship in Cornell University

Sep. 2012 - Jun. 2016 National Chiao Tung University scholarship

Exchange Experience

Jan. - Jun. 2016 Exchange student at University of Illinois at Urbana-Champaign

Jul. - Aug. 2014 Short term internship in Advanced Multimedia Lab in Cornell University

Language

Mandarin, English