CHIH-HUI (JOHN) HO

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EDUCATION

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

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

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

National Chiao Tung University, Hsinchu, Taiwan Sep. 2012 - Jun. 2016
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

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

• 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).

• 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. Rule-Based Optical Character Recognition for Serial Number on Renminbi Banknote, In *IS&T Electronic Imaging 2018 (EI)* (oral presentation)

TEACHING EXPERIENCE

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

ACADEMIC SERVICES

Reviewer: Computer Vision and Pattern Recognition (CVPR) 2020, European Conference on Computer Vision (ECCV) 2020, IEEE International Conference on Image Processing (ICIP) 2019

PROFESSIONAL EXPERIENCE

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

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

Research Assistant, NCTU Computer Vision Research Center Nov. 2016 - Jun. 2017
- 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

Software Engineer Internship, Industrial Technology Research Institute Jan. - Dec. 2015
- 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

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

PROJECTS

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

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

Design assignment for UIUC CS543 computer vision course – *Matlab* Jan. - May 2016
- Implemented example code and designed example architecture to train Cifar 100
- Wrote deep learning tutorials and assignment walkthrough instructions on Kaggle

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

EXCHANGE EXPERIENCE

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

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

AWARDS

UCSD graduate student association travel grant award Spring 2019

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

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

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

SKILLS

Languages: Python, C/C++ , MATLAB, C#
Library: Pytorch, Tensorflow, Numpy, Pandas, Matplotlib, MatConvNet, OpenCV, Keras, LaTeX