

# CHIH-HUI (JOHN) HO

1(702)-684-1190 || chh279@ucsd.edu || chihhuiho.github.io

## EDUCATION

---

<b>University of California San Diego, La Jolla, CA</b> PhD student in Electrical Computer Engineering	Sep. 2019 - Now
<b>University of California San Diego, La Jolla, CA</b> M.S. in Computer Science, GPA: 3.87/4.0	Sep. 2017 - Jun. 2019
<b>University of Illinois at Urbana-Champaign, Champaign, IL</b> Exchange student in Computer Science, GPA: 3.71/4.0	Jan. 2016 - May 2016
<b>National Chiao Tung University, Hsinchu, Taiwan</b> B.S. in EECS Honor Program, GPA: 4.15/4.3	Sep. 2012 - Jun. 2016

## 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**, 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.
- **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**<sup>\*</sup>, Brandon Leung<sup>\*</sup>, 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:** WACV (2021), NIPS (2020), ACCV (2020), CVPR (2020), ECCV (2020), ICIP (2019, 2020)

## PROFESSIONAL EXPERIENCE

---

- |   |                       |
|---|-----------------------|
| <b>Graduate Student Researcher, Statistical Visual Computing Lab, UCSD</b>                      | Jan. 2018 - Now       |
| • Working on multiview recognition, self-supervised learning, structured embedding              |                       |
| <b>Research Volunteer, San Diego Supercomputer Center</b>                                       | Sep. 2017 - Dec. 2017 |
| • Reduced error of large scale operational facility data (200 GB) in scientific workflow by 23% |                       |
| <b>Research Assistant, NCTU Computer Vision Research Center</b>                                 | 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                 |                       |
| <b>Software Engineer Internship, Industrial Technology Research Institute</b>                   | 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, L<sup>A</sup>T<sub>E</sub>X