CHIH-HUI (JOHN) HO

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EDUCATION

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, Image processing, Artificial intelligence, Machine learning, Deep learning

PUBLICATION

• A New Technique of Camera Calibration: A Geometric Approach Based on Principal Lines *(under review)*, 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.

• **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.

• Yu-Shiuan Tsai, Yi-Yu Hsieh, **Chih-Hui Ho**, Rule-Based Optical Character Recognition for Serial Number on Renminbi Banknote, In *IS&T Electronic Imaging 2018 (EI)* (oral presentation)

TEACHING EXPERIENCE

ECE 271C Deep Learning and Applications, Teaching Assistant, UCSD

ACADEMIC SERVICES

Reviewer: IEEE International Conference on Image Processing (ICIP) 2019

PROFESSIONAL EXPERIENCE

Graduate Student Researcher, Statistical Visual Computing Lab, UCSD Jan. 2018 - Now
- Currently working on multiview images feature representation

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