Wei-Yu (Harvey) Chen

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RESEARCH INTERESTS

Computer Vision, Machine Learning, Computational Photography

EDUCATION

Sep 2018–	**Carnegie Mellon University**	PA, USA
	Ph.D. in Electrical and Computer Engineering	
	Cumulative QPA: **4.00**/4.00	
	Relevant Courses: Computational Photography, Convex Optimization	
Sep 2015– Jan 2017	**National Taiwan University**	Taiwan
	M.S. in Electrical Engineering	
	Cumulative GPA :**4.20**/4.30, Overall ranking: 4/91, Major: **4.30**/4.30	
	Relevant Courses: Digital Image Synthesis, Advanced Computer Vision	
Sep 2011– Jun 2015	**National Taiwan University**	Taiwan
	B.S. in Electrical Engineering	
	Cumulative GPA :**4.16**/4.30, Overall ranking: 7/205, Major: **4.21**/4.30	
	Relevant Courses: Deep Learning, Machine Learning, Digital Visual Effects, Robotics	

RESEARCH EXPERIENCE

Sep 2018–   **Image Science Laboratory**   ECE, Carnegie Mellon University

Ph.D. Student, Advisior: Aswin C Sankaranarayanan

Active and passive 3D displays

- Surveyed topics related to active and passive 3D displays, holograms, VR and AR displays
- Working on displaying holograms by phase-only spatial light modulator

Apr 2018–   **Vision and Learning Laboratory**   ECE, Virginia Tech
Jul 2018

Short-term Visiting Scholar, Advisor: Jia-Bin Huang

Few-shot classification

- Empirically studied on performance of meta-learning methods in few-shot classification.
- Discovered that a slightly modified baseline achieved competitive performance with state-of-the-art.
- Figured out that performance of different methods converges when using a deeper backbone.
- Pointed out that performance of meta-learning methods could be degraded by domain difference.

Sep 2015–   **Network Database Laboratory**   EE, National Taiwan University
Jan 2017

M.S. Student, Co-advisor: Ming-Syan Chen, Yu-Chiang Frank Wang

Domain Adaptation of Road Scene Segmentation

- Built a cross-city road scene segmenter exploiting unlabeled city scenes from Google Maps.
- Improved adversarial learning to integrate global and class-wise adaptation with pseudo labels.

Heterogeneous Domain Adaptation

- Associated text information with images by heterogeneous domain adaptation (HDA).
- The first to advance neural network architectures for semi-supervised HDA.
- Proposed Transfer-NDF to preserve structural consistency between labeled and unlabeled data.

Feb 2014–	**Multimedia and Machine Learning Lab**	CITI, Academia Sinica, Taiwan
Jun 2015	Undergraduate Intern Students, Advisor: Yu-Chiang Frank Wang	

(Imbalanced) Unsupervised Domain Adaptation

- Alleviated domain difference in machine learning by exploiting cross-domain data correspondences.
- Discovered latent structural information with maximum mean discrepancy.

PUBLICATIONS

ICLR 2019 A Closer Look at Few-shot Classification
Wei-Yu Chen, Yen-Cheng Liu, Zsolt Kira, Yu-Chiang Frank Wang, Jia-Bin Huang

ICCV 2017 No More Discrimination: Cross City Adaptation of Road Scene Segmenters
Yi-Hsin Chen, **Wei-Yu Chen**, Yu-Ting Chen, Bo-Cheng Tsai, Yu-Chiang Frank Wang, Min Sun

ICASSP 2017 Enhanced Canonical Correlation Analysis with Local Density for Cross-Domain Visual Classification
Wei-Jen Ko, Jheng-Ying Yu, **Wei-Yu Chen**, and Yu-Chiang Frank Wang

ECCV 2016 Transfer Neural Trees for Heterogeneous Domain Adaptation
Wei-Yu Chen, Tzu-Ming Harry Hsu, Yao-Hung Tsai, and Yu-Chiang Frank Wang

AAAI 2016 Domain-Constraint Transfer Coding for Imbalanced Unsupervised Domain Adaptation
Yao-Hung Hubert Tsai, Cheng-An Hou, **Wei-Yu Chen**, Yi-Ren Yeh and Yu-Chiang Frank Wang

ICCV 2015 Unsupervised Domain Adaptation with Imbalanced Cross-Domain Data
Tzu-Ming Hsu, **Wei-Yu Chen,** Cheng-An Hou, Yao-Hung Tsai, Yi-Ren Yeh and Yu-Chiang Frank Wang

ICIP 2015 Connecting the dots without clue: Unsupervised domain adaptation for cross-domain visual classification
Wei-Yu Chen, Tzu-Ming Harry Hsu, Cheng-An Hou, Yi-Ren Yeh and Yu-Chiang Frank Wang

COURSE PROJECTS

Dec 2018	**Pepper's Illusion from Any Cone**	CMU 15862, Computational Photography

Replaced a real object in a transparent mirror cone with an illusion with the same appearance.

Jan 2014	**Storage robot**	National Taiwan University CSIE 5047, Robotics

Built a robot that integrated sound recognition, image processing, and robot arm control to help user deposit or withdraw their belongings.

SKILLS

Programming Languages

Python (Professional), MATLAB (Professional), C++ (Intermediate), R (Intermediate)

Toolboxes/ Libraries

Pytorch, Tensorflow, LIBSVM, OpenCV, Blender, Latex

Languages

English (Fluently), Mandarin Chinese (Native Speaker), Japanese (Basic)

AWARDS & HONORS

Jul 2017	**M.S. Thesis Award**	Chinese Image Processing and Pattern Recognition Society, Taiwan

Awarded from the most representative associations for image processing in Taiwan.

Jan 2017	**Garmin Scholarship**	Garmin, Taiwan

Awarded to EE/CS students for academic achievement by Garmin, Taiwan.

Jun 2015	**Representative to Receive Undergraduate Diploma**	EE, National Taiwan University

Awarded to students in the department with the top 5% GPA over all semesters.