TZU-MING HARRY HSU

Ph.D. Student, Computer Science and Artificial Intelligence Laboratory, MIT

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EDUCATION

Ph.D. Student in Electrical Engineering Computer Science
Massachusetts Institute of Technology

📅 Sep 2017 – Ongoing   📍 Cambridge, MA

B.S.E. in Electrical Engineering
National Taiwan University

📅 Sep 2011 – Jun 2016   📍 Taipei, Taiwan

| Class Rank: 1/190 | GPA: 3.99/4.00 |

B.S. in Physics
National Taiwan University

📅 Sep 2012 – Jun 2016   📍 Taipei, Taiwan

PUBLICATIONS

📕 Journals

- **Transfer Neural Trees: Semi–Supervised Heterogeneous Domain Adaptation and Beyond** IEEE Transactions on Image Processing (TIP)
  Wei–Yu Chen, Tzu–Ming Harry Hsu, Yao–Hung Hubert Tsai, Ming–Syan Chen, and Yu–Chiang Frank Wang.

👥 Conference Proceedings

- **Measuring the Effects of Non–Identical Data Distribution for Federated Visual Classification** FL Workshop, NeurIPS 2019
  Tzu–Ming Harry Hsu, Hang Qi, Matthew Brown.

- **Clinically Accurate Chest X–Ray Report Generation** MLHC 2019
  Tzu–Ming Harry Hsu*, Guanxiong Liu*, Matthew McDermott, Willie Boag, Wei–Hung Weng, Peter Szolovits, Marzyeh Ghassemi.

- **3D–Aware Scene Manipulation via Inverse Graphics** NeurIPS 2018
  Tzu–Ming Harry Hsu*, Shunyu Yao*, Jun–Yan Zhu, Jiajun Wu, Antonio Torralba, William T. Freeman, and Joshua B. Tenenbaum.

- **Unsupervised Multimodal Representation Learning across Medical Images and Reports** ML4H, NeurIPS 2018
  Tzu–Ming Harry Hsu, Wei–Hung Weng, Willie Boag, Matthew McDermott, and Peter Szolovits .

- **Learning Food Quality and Safety using Wireless Stickers** Hotnets 2018
  Unsoo Ha, Yunfei Ma, Zexuan Zhong, Tzu–Ming Harry Hsu, and Fadel Adib.

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

HIGHLIGHT

🏆 *Ranked #1 in IPhO 2011*
International Physics Olympiad 2011 with 400+ participants

STRENGTHS

| Computer Vision | Federated Learning |
| ML for Healthcare | Machine Learning |
| Signal Processing |

LEADERSHIP

MIT Taiwanese Student Association
President

📅 May 2018 – April 2019

NTU Toastmasters Club
Public Relations/Member Vice President

📅 Mar 2014 – Feb 2015

WORK EXPERIENCE

Beth Israel Deaconess Medical Center
Research Intern

📅 Nov 2019 – Ongoing

Brigham and Women's Hospital
Research Trainee

📅 Sep 2019 – Ongoing

Google AI
Research Intern / Student Researcher

📅 Jun 2019 – Ongoing

Digital Drift Corporation
Lead Data Scientist

📅 Mar 2016 – Ongoing

Ministry of National Defense, Taiwan
Military Service

📅 Jul 2016 – Jun 2017

PUBLICATIONS (CONT'D)

- **Unsupervised Domain Adaptation With Imbalanced Cross–Domain Data** ICCV 2015
  Tzu–Ming Harry Hsu, Wei–Yu Chen, Cheng–An Hou, Yao–Hung Hubert Tsai, Yi–Ren Yeh, and Yu–Chiang Frank Wang.
- **Connecting the Dots Without Clues: Unsupervised Domain Adaptation for Cross–domain Visual Classification** ICIP 2015
  Wei–Yu Chen, Tzu–Ming Harry Hsu, Cheng–An Hou, Yi–Ren Yeh and Yu–Chiang Frank Wang.

RESEARCH EXPERIENCE

Google AI
Dr. Matthew Brown
📅 Jun 2019 – Ongoing   📍 Google

- Investigate the effect of non–identical data in training federated learning visual classifiers

Clinical Decision Making Group (MEDG)
Prof. Peter Szolovits
📅 Jul 2018 – Ongoing   📍 MIT CSAIL

- Beyond full supervision for uncovering underlying structure of medical radiology data and clinician reports
- 3D medical imaging including MRI and CT
- Medical report generation from radiographs

Computer Vision Group
📅 Feb 2018 – June 2018   📍 MIT CSAIL

- Use 3D–aware vision as inverse–graphics for image editing

Signal Kinetics Lab
Prof. Fadel Adib
📅 Sep 2017 – Jan 2018   📍 MIT Media Lab

- Mobile localization in LTE cellular network
- Food quality and content detection with wireless signal

Multimedia and Machine Learning Lab
Prof. Yu–Chiang Wang
📅 Apr 2014 – Jun 2016   📍 Academia Sinica, Taiwan

- Unsupervised domain adaptation with imbalanced cross–domain data
- Deep learning for heterogeneous domain adaptation

Access IC Lab
Prof. An–Yeu Andy Wu
📅 Sep 2014 – Jun 2015   📍 NTU, Taiwan

- Noise removal of photoplethysmographic signals

Laboratory for Applied Logic and Computation in System Design (ALCom Lab)
Prof. Jie–Hong Roland Jiang
📅 Jul 2013 – Jun 2014   📍 NTU, Taiwan

- Continuous–time mathematical models for neurons

AWARDS

Altera Innovate Asia FPGA Design Competition
Silver Medal
📅 2015

- Designed a custom PCB for music modulation and user sporting statistics

ICASSP Signal Processing Cup
Tenth Place
📅 2015

- Ranked 10th globally in heartbeat detection for sports

International Physics Olympiad (IPhO)
First Place Overall, in Theory, and in Experiment
📅 2011

- Ranked 1st in both theory section and experiment section among 401 international representatives from over 80 countries

International Junior Science Olympiad (IJSO)
Gold Medal
📅 2008

- Ranked top 10% among 300 international representatives from over 60 countries