# TZU-MING HARRY HSU

**2nd year Ph.D. Student, Computer Science and Artificial Intelligence Laboratory, MIT**
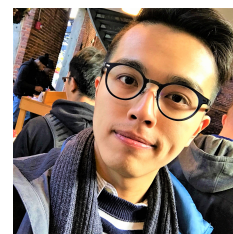
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## EDUCATION

### 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

### 📖 Journal

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

### 👥 Conference Proceedings

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

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

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

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

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

- **Connecting the Dots Without Clues: 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. ICIP 2015

## HIGHLIGHT

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

- 🧍 ***2 years in Startup***
  *Bite! App with 50k users and 100k food diaries*
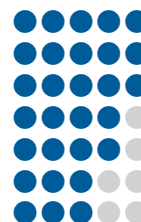
## STRENGTHS

Computer Vision    ML for Healthcare
Machine Learning    Signal Processing

## SKILLS

| Skill | Level |
|---|---|
| **TensorFlow** | ●●●●● |
| **PyTorch** | ●●●●● |
| **Docker** | ●●●●○ |
| **C/C++** | ●●●●○ |
| **MATLAB** | ●●●●○ |
| **Java** | ●●●○○ |
| **HTML/CSS/JS** | ●●●○○ |

## LEADERSHIP

### MIT Taiwanese Student Association
**President**

📅 May 2018 – Ongoing

### NTU Toastmasters Club
**Public Relations/Member Vice President**

📅 Mar 2014 – Feb 2015

## WORK EXPERIENCE

### Digital Drift Corporation
**Lead Data Scientist**

📅 Mar 2016 – Jul 2017

### Ministry of National Defense, Taiwan
**Military Service**

📅 Jul 2016 – Jun 2017

# RESEARCH EXPERIENCE

## 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

## 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