# Chen, Yi-Ting

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## Education

- **University of Maryland** — **College Park, MD, United States**
  Ph.D. in Computer Science - Dean's fellowship — August 2021 - May 2026
- **Carnegie Mellon University - School of Computer Science** — **Pittsburgh, PA, United States**
  Master in Computer Vision (MSCV) — December 2020
- **National Taiwan University - Graduate Institute of Electronics Engineering** — **Taipei, Taiwan**
  Master in Electronics Engineering — October 2016
- **National Cheng Kung University** — **Tainan, Taiwan**
  Bachelor in Electrical Engineering | Industrial and Information Management, double major — June 2013

## Publication

- **Multimodal Object Detection via Probabilistic Ensembling**
  **Yi-Ting Chen***, Jinghao Shi*, Zelin Ye*, Shu Kong, Christoph Mertz, Deva Ramanan
  IEEE Conference on European Conference on Computer Vision (ECCV), 2022 **oral**.
- **FSA-Net: Learning Fine-Grained Structure Aggregation for Head Pose Estimation from a Single Image**
  Tsun-Yi Yang, **Yi-Ting Chen**, Yen-Yu Lin, Yung-Yu Chuang
  IEEE Conference on Computer Vision and Pattern Recognition (CVPR), 2019
- **SRIANN: Sphere Ring Intersection for Approximate Nearest Neighbor Search in Videos**
  **Yi-Ting Chen**, Wei-Chih Tu, Shao-Yi Chien
  IEEE International Conference on Image Processing(ICIP), 2018
- **Fast Video Super-Resolution via Approximate Nearest Neighbor Search**
  **Yi-Ting Chen**, Wei-Chih Tu, Shao-Yi Chien
  IEEE International Conference on Image Processing(ICIP), 2016

## Industry Experiences

**Meta** — **Burlingame, CA, United States**
*Research Scientist Intern* — *May 2022 - Now*
- Neural radiance fields related topics

**Argo AI** — **Pittsburgh, PA, United States**
*Software Engineer Intern* — *May 2021 - Aug 2021*
- Conducted research on multimodal late fusion for object detection.

**Amazon** — **Pittsburgh, PA, United States**
*Applied Scientist Intern* — *May 2020 - August 2020*
- Developed deep network for 3D object detection algorithm with 2D feature aided for more accurate detection by Pytorch.
- Achieved **3** percent improvement on mean average precision(mAP) with proposed method.

**Mediatek** — **Taipei, Taiwan**
*Software Engineer, Multimedia Division* — *October 2016 - May 2018*

- Established algorithm to enhance image/video contrast that works with low computational cost and high flexibility for smart phone chips.
- Developed a scene recognition algorithm to assist with camera auto-exposure and auto-white-balance functions, raising the correctness of color assignment.
- Implemented a universal auto-white-balance calibration approach that eliminated the difference between different modules, saving time for module calibration.

## Research Experiences

**University of Maryland, with Prof. Jia-Bin Huang** **College Park, MD, United States**
*NeRF editing* *May 2022 - Current*

**Carnegie Mellon University, with Prof. Deva Ramanan** **Pittsburgh, PA, United States**
*MSCV Capstone, Multimodal Object Detection for Autonomous Driving* *January 2020 - November 2021*

- Developed different fusion strategies for multimodal object detection with Convolutional Neural Networks (CNN) in applications of autonomous driving using Pytorch.
- Outperformed prior works by **13** percent in relative performance with proposed Baysian late fusion.
- Collected data of infrared sensor and RGB sensor for autonomous driving applications at different scenarios.

**Academia Sinica, with Prof. Yen-Yu Lin** **Taipei, Taiwan**
*Research Assistant* *August 2018 - July 2019*

- Utilized fine-grained structure of face in feature space for accurate head pose estimation, resulting in a fast and compact CNN model.
- Disentangled the information of image style and person classification features for person re-identification, and verified the disentanglement with cycle consistency of Generative Adversarial Network (GAN) using Pytorch.

**National Taiwan University with Prof. Shao-Yi Chien** **Taipei, Taiwan**
*Graduate Research Assistant* *September 2013 - October 2016*

- Accelerated video super resolution framework via approximate nearest neighbor search, achieving an acceleration rate 20 times faster with MATLAB.
- Parallelized ANN search algorithm with CUDA to achieve higher search accuracy and increased the computation speed over state-of-the-art video ANN search algorithm.

## Selected Projects

**ObjectSLAM: Visual SLAM with Dynamic Object Removal** CMU - 20 Spring

- Utilizing the information of semantic map from MaskRCNN Improved ORB-SLAM2 with semantic map information from MaskRCNN, achieving dynamic object removal.

**Rectangling Panoramic Images via Warping** CMU - 19 Fall

- Implemented SIGGRAPH paper "Rectangling Panoramic Images via Warping", generating rectangular images by content-aware warping.

## Teaching Assistant

UMD CMSC422 - Computer Vision CMU - 22 Spring
CMU 16833 - Robot Localization and Mapping (SLAM) CMU - 20 Fall

## Selected Courses

**Carnegie Mellon University** December 2020

## Skills

**Programming**: C/C++, Python, MATLAB, Verilog
**Toolkit**: OpenCV, CUDA, LaTeX, Git, Dockerfile
**ML related**: Pytorch, tensorboardx, visdom