Chen, Yi-Ting

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Education

- **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 of Electrical Engineering | Industrial and Information Management, double major June 2013

Publication

- **Multimodal Object Detection via Bayesian Late Fusion**
  Yi-Ting Chen*, Jinghao Shi*, Shu Kong, Christoph Mertz, Deva Ramanan
  Submitted to CVPR 2021
- **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

Research Experiences

Carnegie Mellon University, with Prof. Deva Ramanan, Dr. Christoph Mertz **Pittsburgh, PA, United States**
Research Collaborator, Benchmark Dataset for Autonomous Driving *December 2020 - Current*

- Collecting data of infrared sensor and RGB sensor for autonomous driving application at different time and weather scenarios.
- Developing end-to-end algorithm to align mismatched RGB-thermal image pairs and generate detection results simultaneously.

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

- Developed different fusion strategies for multimodal object detection with Convolutional Neural Networks (CNN) in applications of autonomous driving using Pytorch.
- Outperformed prior works by **12** percent in relative performance with proposed Baysian late fusion.

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.

Industry Experiences

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 cell 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 of module calibration.

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

Course 16833 - Robot Localization and Mapping (SLAM) CMU - 20 Fall

Selected Courses

Carnegie Mellon University December 2020

- 16720B - Computer Vision | 10601 - Machine Learning | 16811 - Math Fundamentals for Robotics
- 16824 - Visual Learning and Recognition | 16833 - Robot Localization and Mapping
- 16887 - Special Topics in Geometry-based Methods in Vision | 15662 - Computer Graphics

National Taiwan University October 2016

- CSIE - Digital Visual Effects | CSIE - Digital Image Processing | EE - The Design and Analysis of Algorithms
- EE - Advance Digital Signal Processing

Skills

Programming: C/C++, Python, MATLAB, Verilog

Toolkit: OpenCV, CUDA, LaTeX, Git, Dockerfile | **ML related:** Pytorch, tensorboardx, visdom