Wei-Lun Chang (Wilson)

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📅 23th, February, 1995

Education

2017 – 2019

Master of Science, *Nation Chiao Tung University (NCTU),* Hsinchu, Taiwan
Institute of Electronics, Department of Electronics Engineering ⚡
Advisors: Prof. Sheng-Jyh Wang ⚡ and Prof. Wei-Chen Chiu ⚡
Thesis title: *Adapting Structural Information across Domains for Boosting Semantic Segmentation.*
Honor: Outstanding Graduate Award
GPA Overall: 4.12/4.3, 28 credits
Main Courses: Detection and Estimation, Deep Learning and Practice, Machine Learning (auditing), Computer Vision (auditing)
Online Course: Deep Reinforcement Learning (CS294-113, Stanford University)

2013 – 2017

Bachelor of Science, *Nation Chiao Tung University (NCTU),* Hsinchu, Taiwan
Department of Photonics ⚡
GPA Overall: 3.93/4.3, 158 credits
Main Courses: Physics-related Courses, Advanced Digital Signal Processing, Random Processing and Digital Image Processing

2010 – 2013

High School Graduation, *Hsinchu Senior High School,* Hsinchu, Taiwan

Academic and Working Experiences

Summer 2020

Engineer, *Qualcomm Technologies Inc.,* Hsinchu, Taiwan ⚡
Department: Multimedia & RD and Standard
Topic: Algorithm research and design for 3D reconstruction
Manager: Dr. Michel Sarkis ⚡

Spring 2020

Private (Compulsory), *R.O.C. Army,* Taipei, Taiwan
Unit: Military Police Training Center in Taipei, 6th Army Corps.

Winter 2019

Engineer, *Qualcomm Technologies Inc.,* Hsinchu, Taiwan ⚡
Department: Multimedia & RD and Standard
Topic: Optimizing algorithms on chip (e.g. real-time & high-accuracy sign detection)
Manager: Dr. Michel Sarkis ⚡

Spring 2019

Teaching Assistant, *Nation Chiao Tung University,* Hsinchu, Taiwan
Institute of Multimedia Engineering, College of Computer Science ⚡
Course: Computer Vision
Lecturer: Prof. Wei-Chen Chiu ⚡

Summer 2017

Internship, *Industrial Technology Research Institute,* Hsinchu, Taiwan
Department: Computer and Communication Technology ⚡
Topic: Large-scale automatic licence plate detection

Academic and Working Experiences (continued)

Spring 2017 · **Teaching Assistant**, *Nation Chiao Tung University,* Hsinchu, Taiwan
Department of Electronics Engineering ⚡
Course: Electronic Lab ⚡
Lecturer: Prof. Meng-Wei Wang

Summer 2016 · **Internship**, *YoungOptics Inc.,* Hsinchu, Taiwan ⚡
Topic: Developing algorithms for optical inspection, e.g. capturing the feature of target objects and calibration

Research Interests

I am interested in the area of **computer vision** and **machine learning**, including but not limited to

- Metric learning
- Scene understanding
- Generative models
- 3D reconstruction

Research Project

2018.11-2019.04 · **Learning to Cluster by Robust Similarity Function for Transferring Knowledge across Domains and Tasks**

- Finds that most of the adversarial learning techniques could be harmful to the embedded space of the partial domain adaptation scenario.
- Explores the method of utilizing psuedo labels to potentially tackle the problem of partial domain adaptation.
- Advisors: Prof. Wei-Chen Chiu ⚡, Prof. Wen-Hsiao Peng ⚡

2018.02-2018.11 · **All About Structure: Adapting Structural Information across Domains for Boosting Semantic Segmentation** 🌐 webpage.

(a) Conventional domain adaptation

(b) The proposed method
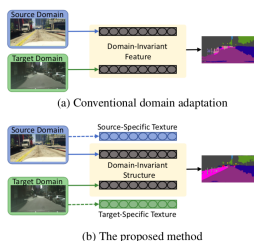
- Learns an image representation comprising explicitly a domain-invariant structure component and a domain-specific texture component.
- Makes only the structure component domain invariant.
- Allows image-to-image translation across domains which further enables label transfer, with all achieved within one single framework.
  - **Wei-Lun Chang**, Hui-Po Wang, Wen-Hsiao Peng, and Wei-Chen Chiu. **All about structure: Adapting structural information across domains for boosting semantic segmentation.** In The IEEE Conference on Computer Vision and Pattern Recognition (**CVPR**), June 2019. ⚡ paper
  - **Wei-Lun Chang**, Hui-Po Wang, Wen-Hsiao Peng, and Wei-Chen Chiu. **Disentangling domain-invariant structural information for improving semantic segmentation.** In The Conference on Computer Vision, Graphics, and Image Processing (**CVGIP**), August 2019. (Note: **CVGIP** is a domestic conference in Taiwan.)

2015.09-2016.09 · **ANFIS Architecture Quadcopter.** Undergraduate Project, Department of Photonics

- Designs neural fuzzy network to control the quadcopter.
- Analyzes different control theories, and coordinates systems between hardware and software.
- Advisor: Prof. Jhih-Hong Chen ⚡

Research Publications

1   **Chang, Wei-Lun**, Wang, H.-P., Peng, W.-H., & Chiu, W.-C. (2019a). All about structure: Adapting structural information across domains for boosting semantic segmentation, In *IEEE International Conference on Computer Vision and Pattern Recognition (CVPR)*.

2   **Chang, Wei-Lun**, Wang, H.-P., Peng, W.-H., & Chiu, W.-C. (2019b). Disentangling domain-invariant structural information for improving semantic segmentation, In *IPPR Conference on Computer Vision, Graphics, and Image Processing (CVGIP) (Best Paper Award)*.

References

Dr. Michel Sarkis (My manager in Qualcomm) ⚡
Engineer, Senior Manager
Qualcomm Technologies Inc.
msarkis@qti.qualcomm.com

Prof. Wei-Chen Chiu (Advisor for my master thesis) ⚡
Assistant Professor
Department of Computer Science, Nation Chiao Tung University
walon@cs.nctu.edu.tw

Prof. Wen-Hsiao Peng (Co-Advisor for my master thesis) ⚡
Professor
Department of Computer Science, Nation Chiao Tung University
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