Cheng-Chun Hsu

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Education

The University of Texas at Austin — TX, USA
M.S. in Computer Science — Sep 2021 – present

National Taiwan University of Science and Technology — Taipei, Taiwan
B.S. in Computer Science — Sep 2015 – Jun 2019

Publications

Conference Articles

Ditto in the House: Building Articulated Models of Indoor Scenes through Interactive Perception — In submission
Cheng-Chun Hsu, Zhenyu Jiang, and Yuke Zhu

Ditto: Building Digital Twins of Articulated Objects from Interaction — CVPR 2022
Zhenyu Jiang, **Cheng-Chun Hsu**, and Yuke Zhu
Oral presentation

Every Pixel Matters: Center-aware Feature Alignment for Domain Adaptive Object Detector — ECCV 2020
Cheng-Chun Hsu, Yi-Hsuan Tsai, Yen-Yu Lin, and Ming-Hsuan Yang

Weakly Supervised Instance Segmentation using the Bounding Box Tightness Prior — NeurIPS 2019
Cheng-Chun Hsu*, Kuang-Jui Hsu*, Chung-Chi Tsai, Yen-Yu Lin, and Yung-Yu Chuang

What Dress Fits Me Best? Fashion Recommendation on the Clothing Style for Personal Body Shape — MM 2018
Shintami Chusnul Hidayati, **Cheng-Chun Hsu**, Yu-Ting Chang, Kai-Lung Hua, Jianlong Fu, and Wen-Huang Cheng
Oral presentation

Technical Reports

Center-context-gap Refinement for Weakly Supervised Instance Segmentation — 2019
Cheng-Chun Hsu*, Kuang-Jui Hsu*, Chiachen Ho, Yen-Yu Lin, and Yung-Yu Chuang

Experience

UT Robot Perception and Learning Lab — TX, USA
Researcher — Sep 2021 – present
Advisor: Prof. Yuke Zhu

Ditto in the House: Building Articulated Models of Indoor Scenes through Interactive Perception
- Designed a framework for building articulated models of indoor scenes by interactive perception.
- Propose a model that identifies possible articulated objects and infers the articulation properties.
- Applied to a real-world scene and successfully built the articulated models of the environment.

Ditto: Building Digital Twins of Articulated Objects from Interaction
- Designed a framework for recreating interactive digital twins of real-world articulated objects.
- Proposed a model that learns full-fledged geometry reconstruction and articulation estimation.
- Interacted with the digital twin in simulation and transferred the actions back to the real world.

Facebook Reality Labs — London, UK
Contingent Worker (remote) — Sep 2020 – Jun 2021
Supervisor: Dr. Vassileios Balntas

- Improved long-term visual localization tasks with adaptive features and semantic consistency.
- Developed visual localization benchmark analysis tools and evaluation pipelines.
- Developed a 3D annotation tool for OpenSfM based on Three.js and Flask.

Vision and Learning Lab, Academia Sinica
Taipei, Taiwan

Research Assistant
Jul 2018 – Aug 2020

Advisor: Prof. Yen-Yu Lin and Prof. Ming-Hsuan Yang

Every Pixel Matters: Center-aware Feature Alignment for Domain Adaptive Object Detector
- Designed a framework for domain adaptation in object detection by pixel-level object parts mining.
- Proposed center-aware alignment to reduce the negative effects caused by cluttered backgrounds.
- Improved the baseline by 17.6% and performed the best compared to other methods.

Weakly Supervised Instance Segmentation using the Bounding Box Tightness Prior
- Designed an end-to-end trainable network for instance segmentation with only box annotations.
- Formulated the task as a multiple instance learning problem with tightness box constraint.
- Surpassed the baselines by 14% at one-sixth of the annotation cost of fully supervised methods.

Center-context-gap Refinement for Weakly Supervised Instance Segmentation
- Designed a network for instance segmentation with only image-level labels.
- Proposed a differentiable module to refine box proposals based on the segmentation score map.

Multimedia Computing Lab, Academia Sinica
Taipei, Taiwan

Researcher
Jul 2017 – Apr 2018

Advisor: Prof. Wen-Huang Cheng

Fashion Recommendation on the Clothing Style for Personal Body Shape
- Constructed a benchmark dataset for fashion recommendations based on body shapes.
- Designed a cross-modality framework to learn the compatibility of clothing styles and body shapes.
- Provided fashion styling tips by exploiting and analyzing the stylish celebrities' data online.

Honors & Awards

Appier AI Scholarship for NeurIPS 2019, Appier 2019

Academic Excellence Award, NTUST 2018
Top 5% of students in one semester

Academic Service

Conference Reviewer: CVPR, ECCV, WACV, NeurIPS, ICLR, AAAI, IJCAI

Positions of Responsibility

NTUST Student Government Association
Vice President
Jun 2016 – Jun 2017

- Advised on matters of importance and concern to students.
- Planned and organized all events and programs of Student Government.

References

Yuke Zhu
Assistant Professor
The University of Texas at Austin

Joydeep Biswas
Assistant Professor
The University of Texas at Austin

Ming-Hsuan Yang
Professor
University of California, Merced

Yen-Yu Lin
Distinguished Professor
National Chiao Tung University