Yun-Chun Chen

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YunChunChen

Education

Sept. 2020 – Present **Ph.D. Student**, University of Toronto, ON, Canada.
Department of Computer Science.
Advisor: Animesh Garg.

Sept. 2014 – Jun. 2018 **Bachelor of Science**, National Taiwan University, Taipei, Taiwan.
Department of Electrical Engineering.

Work Experience

May 2021 – Present **NVIDIA Research Robotics Team, Seattle, WA, USA**.
Remote Research Intern. Manager: Dieter Fox. Mentors: Adithya Murali and Bala Sundaralingam.
- Working on robotic grasping and motion planning.

Sept. 2020 – Present **People, AI and Robotics Lab, University of Toronto, ON, Canada**.
Graduate Research Assistant. Advisor: Animesh Garg.
- Working on 3D geometric shape assembly.
- Developed an imitation learning algorithm for learning robotic manipulation skills.

Sept. 2020 – Present **Vector Institute, Toronto, ON, Canada**.
Student Researcher. Advisor: Animesh Garg.

Jan. 2020 – Jun. 2020 **Vision and Learning Lab, University of California, Merced, CA, USA**.
Short-term Visiting Scholar. Mentor: Ming-Hsuan Yang.
- Proposed a video-based learning algorithm for 3D human pose and shape estimation.

Apr. 2019 – Jul. 2019 **Vision and Learning Lab, Virginia Tech, VA, USA**.
Short-term Visiting Scholar. Mentor: Jia-Bin Huang.
- Proposed an algorithm for searching structured image prior for image restoration and synthesis tasks.

Jul. 2017 – Jan. 2019 **Computer Vision Lab, Academia Sinica, Taipei, Taiwan**.
Research Assistant. Mentors: Yen-Yu Lin, Jia-Bin Huang, and Ming-Hsuan Yang.
- Proposed a cross-task consistency algorithm for joint semantic matching and object co-segmentation.
- Proposed a cross-resolution generative adversarial network for cross-resolution visual recognition.
- Proposed a cross-domain consistency algorithm for unsupervised domain adaptation.
- Developed a weakly-supervised learning algorithm for semantic matching.

Selected Publications

Journal Papers

CVIU 2021 **Self-Attentive 3D Human Pose and Shape Estimation from Videos**.
Yun-Chun Chen, Marco Piccirilli, Robinson Piramuthu, and Ming-Hsuan Yang.
Computer Vision and Image Understanding (CVIU), 2021.

PAMI 2021 **Show, Match and Segment: Joint Weakly Supervised Learning of Semantic Matching and Object Co-segmentation**.
Yun-Chun Chen, Yen-Yu Lin, Ming-Hsuan Yang, and Jia-Bin Huang.
IEEE Transactions on Pattern Analysis and Machine Intelligence (PAMI), 2021.

Conference Papers

IROS 2021 **Learning by Watching: Physical Imitation of Manipulation Skills from Human Videos**.
Haoyu Xiong, Quanzhou Li, **Yun-Chun Chen**, Homanga Bharadhwaj, Samarth Sinha, and Animesh Garg.
IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS), 2021.

ECCV 2020 **NAS-DIP: Learning Deep Image Prior with Neural Architecture Search**.
Yun-Chun Chen*, Chen Gao*, Esther Robb, and Jia-Bin Huang.
European Conference on Computer Vision (ECCV), 2020.

ECCV 2020 **Learning to Learn in a Semi-Supervised Fashion**.
Yun-Chun Chen, Chao-Te Chou, and Yu-Chiang Frank Wang.
European Conference on Computer Vision (ECCV), 2020.

ICCV 2019 **Recover and Identify: A Generative Dual Model for Cross-Resolution Person Re-Identification**.
Yun-Chun Chen*, Yu-Jhe Li*, Yen-Yu Lin, Xiaofei Du, and Yu-Chiang Frank Wang.
IEEE International Conference on Computer Vision (ICCV), 2019.

CVPR 2019 **CrDoCo: Pixel-level Domain Transfer with Cross-Domain Consistency**.
Yun-Chun Chen, Yen-Yu Lin, Ming-Hsuan Yang, and Jia-Bin Huang.
IEEE Conference on Computer Vision and Pattern Recognition (CVPR), 2019.

AAAI 2019 **Learning Resolution-Invariant Deep Representations for Person Re-Identification**.
Yun-Chun Chen*, Yu-Jhe Li*, Xiaofei Du, and Yu-Chiang Frank Wang.
AAAI Conference on Artificial Intelligence (AAAI), 2019. **Oral Presentation**

ACCV 2018 **Deep Semantic Matching with Foreground Detection and Cycle-Consistency**.
Yun-Chun Chen, Po-Hsiang Huang, Li-Yu Yu, Jia-Bin Huang, Ming-Hsuan Yang, and Yen-Yu Lin.
Asian Conference on Computer Vision (ACCV), 2018.

Workshop Papers

ICML-W 2021 **Learning by Watching: Physical Imitation of Manipulation Skills from Human Videos**.
Haoyu Xiong, Quanzhou Li, **Yun-Chun Chen**, Homanga Bharadhwaj, Samarth Sinha, and Animesh Garg.
ICML Workshop on Human in the Loop Learning, 2021.

RSS-W 2021 **Learning by Watching: Physical Imitation of Manipulation Skills from Human Videos**.
Haoyu Xiong, Quanzhou Li, **Yun-Chun Chen**, Homanga Bharadhwaj, Samarth Sinha, and Animesh Garg.
RSS Workshop on Visual Learning and Reasoning for Robotics, 2021.

Preprint

arXiv 2020 **Cross-Resolution Adversarial Dual Network for Person Re-Identification and Beyond**.
Yun-Chun Chen*, Yu-Jhe Li*, Yen-Yu Lin, and Yu-Chiang Frank Wang.
Under review at International Journal of Computer Vision (IJCV).
arXiv preprint arXiv:2002.09274

Teaching Experience

University of Toronto

Winter 2022 CSC 375: Algorithmic Intelligence in Robotics. Instructor: Animesh Garg.
Winter 2022 CSC 413/2516: Neural Networks and Deep Learning. Instructor: Jimmy Ba.
Winter 2021 CSC 413/2516: Neural Networks and Deep Learning. Instructor: Jimmy Ba.

National Taiwan University

Spring 2018 EE 5184: Machine Learning.
Fall 2017 EE 1004: Computer Programming.

Honors and Awards

2021 Vector Institute Research Grant.
2021 Top 25% of Program Committee Members of AAAI 2021.
2019 Appier AI Scholarship for ICCV 2019.
2019 Appier AI Scholarship for CVPR 2019.
2019 Appier AI Scholarship for AAAI 2019.
2018 Third Place in IEEE Video and Image Processing (VIP) Cup.
2017 Second Prize in NTUEE Undergraduate Innovation Award.

Academic Services

Journal Reviewer

IEEE Robotics and Automation Letters (RA-L)
International Journal of Computer Vision (IJCV)
Image and Vision Computing (IVC)
IET Computer Vision
IEEE Transactions on Image Processing (TIP)

Senior Program Committee

International Joint Conference on Artificial Intelligence (IJCAI), 2021

Conference Reviewer/Program Committee

Neural Information Processing Systems (NeurIPS), 2020, 2021
International Conference on Learning Representations (ICLR), 2021, 2022
International Conference on Machine Learning (ICML), 2021, 2022
IEEE Conference on Computer Vision and Pattern Recognition (CVPR), 2020, 2021, 2022
IEEE International Conference on Computer Vision (ICCV), 2019, 2021
European Conference on Computer Vision (ECCV), 2020
British Machine Vision Conference (BMVC), 2019, 2020, 2021
Asian Conference on Computer Vision (ACCV), 2020
IEEE Winter Conference on Applications of Computer Vision (WACV), 2021, 2022
IEEE International Conference on Robotics and Automation (ICRA), 2021
Conference on Robot Learning (CoRL), 2020
International Joint Conference on Artificial Intelligence (IJCAI), 2022
AAAI Conference on Artificial Intelligence (AAAI), 2020, 2021, 2022
IEEE International Conference on Image Processing (ICIP), 2019
Gordon Research Conference/Seminar in Robotics (GRS), 2022

Volunteer

International Conference on Learning Representations (ICLR), 2021
International Conference on Machine Learning (ICML), 2021

References

Ph.D. Advisor

Animesh Garg
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Department of Computer Science
University of Toronto
Email: garg@cs.toronto.edu

Research Mentor

Ming-Hsuan Yang
Professor
Department of Electrical Engineering and Computer Science
University of California, Merced
Email: mhyang@ucmerced.edu

Research Mentor

Jia-Bin Huang
Assistant Professor
Department of Electrical and Computer Engineering
Virginia Tech
Email: jbhuang@vt.edu

Research Mentor **Yen-Yu Lin**
Professor
Department of Computer Science
National Chiao Tung University
Email: lin@cs.nctu.edu.tw