Yun-Chun Chen

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Research Interests

Generative AI, Foundation Models, Diffusion Models, Vision Language Models, Computer Vision.

Education

University of Toronto, ON, Canada. Sep 2020 - Summer 2025 (expected)
Ph.D. Candidate in Computer Science.
Advisor: Alec Jacobson.
Committee: Alec Jacobson, Sanja Fidler, Sven Dickinson.

National Taiwan University, Taipei, Taiwan. Sep 2014 - Jun 2018
B.S. in Electrical Engineering.

Work Experience

University of Toronto, ON, Canada. Sep 2020 - Present
Position: Graduate Research Assistant.
Advisor: Alec Jacobson.

- Working on generative AI and computer vision research.

Vector Institute, Toronto, ON, Canada. Sep 2020 - Present
Position: Student Researcher.

- Working on artificial intelligence and deep learning research.

Meta Reality Labs, Burlingame, CA, USA. May 2024 - Jan 2025
Position: Research Scientist Intern.

- Worked on Dynamic Gaussian Splatting for codec avatar applications.

Adobe Research, Seattle, WA, USA. Jun 2023 - Sep 2023
Position: Research Scientist Intern.
Mentors: Matheus Gadelha, Vova Kim, Zhiqin Chen.

- Worked on controllable text-to-3D generation with diffusion models.

Adobe Research, Toronto, ON, Canada. Jun 2022 - Jan 2023
Position: Research Scientist Intern.
Mentors: Vova Kim, Noam Aigerman.

- Worked on progressive representations for mesh compression and transmission.
- Filed a patent.

NVIDIA Seattle Robotics Lab, WA, USA. May 2021 - Feb 2022

Position: Research Intern (remote).

Mentors: Adithya Murali, Balakumar Sundaralingam, Dieter Fox.

- Worked on implicit neural representations for robotic grasping and motion planning.
- Filed a patent.

University of California, Merced, CA, USA. Jan 2020 - Jun 2020

Position: Short-term Visiting Scholar.

Mentor: Ming-Hsuan Yang.

- Worked on 3D human pose and shape estimation from videos.

Virginia Tech, VA, USA. Apr 2019 - Jul 2019

Position: Short-term Visiting Scholar.

Mentors: Jia-Bin Huang.

- Worked on neural architecture search for image restoration and synthesis.

Academia Sinica, Taipei, Taiwan. Jul 2017 - Jan 2019

Position: Research Assistant.

Mentors: Yen-Yu Lin, Jia-Bin Huang, Ming-Hsuan Yang.

- Worked on unsupervised domain adaptation for dense prediction tasks.
- Worked on weakly supervised semantic matching and object co-segmentation.

Selected Publications

Google Scholar Profile: https://scholar.google.com/citations?user=TiCSofEAAAAJ&hl=en

Conference and Journal Papers

14. **Text-guided Controllable Mesh Refinement for Interactive 3D Modeling.**
    Yun-Chun Chen, Selena Ling, Zhiqin Chen, Vladimir G. Kim, Matheus Gadelha, Alec Jacobson.
    ACM SIGGRAPH Asia, 2024.

13. **Neural Progressive Meshes.**
    Yun-Chun Chen, Vladimir G. Kim, Noam Aigerman, Alec Jacobson.
    ACM SIGGRAPH, 2023.
    Filed a patent

12. **Breaking Bad: A Dataset for Geometric Fracture and Reassembly.**
    Silvia Sellán*, **Yun-Chun Chen***, Ziyi Wu*, Animesh Garg, Alec Jacobson. (*joint first authors)
    Neural Information Processing Systems (NeurIPS) Datasets and Benchmarks Track, 2022.
    Featured Paper Presentation

11. **Grasp'D: Differentiable Contact-rich Grasp Synthesis for Multi-fingered Hands.**
Dylan Turpin, Liquan Wang, Eric Heiden, **Yun-Chun Chen**, Miles Macklin, Stavros Tsogkas, Sven Dickinson, Animesh Garg.
European Conference on Computer Vision (ECCV), 2022.
Oral Presentation

10. **Neural Shape Mating: Self-Supervised Object Assembly with Adversarial Shape Priors.**
Yun-Chun Chen, Haoda Li, Dylan Turpin, Alec Jacobson, Animesh Garg.
IEEE Conference on Computer Vision and Pattern Recognition (CVPR), 2022.

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

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

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

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

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

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

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

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

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

Workshop Papers

3. **Neural Motion Fields: Encoding Grasp Trajectories as Implicit Value Functions.**
   Yun-Chun Chen*, Adithyavairavan Murali*, Balakumar Sundaralingam*, Wei Yang, Animesh Garg, Dieter Fox.
   RSS 2022 Workshop on Implicit Representations for Robotic Manipulation, 2022.
   Spotlight Talk & Filed a patent

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

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

Preprint

1. **Cross-Resolution Adversarial Dual Network for Person Re-Identification and Beyond.**
   Yu-Jhe Li*, **Yun-Chun Chen***, Yen-Yu Lin, Yu-Chiang Frank Wang.
   arXiv preprint arXiv:2002.09274

Talks

ACM SIGGRAPH Asia 2024 Dec 2024

Text-guided Controllable Mesh Refinement for Interactive 3D Modeling.

ACM SIGGRAPH 2023 Aug 2023

Neural Progressive Meshes.

Toronto Geometry Colloquium May 2022

Neural Shape Mating: Self-Supervised Object Assembly with Adversarial Shape Priors.

Patents

2. **Progressively Generating Fine Polygon Meshes.**
   Vladimir G. Kim, **Yun-Chun Chen**, Noam Aigerman, Alec Jacobson.
   US Patent Application No. 18/355,995.

1. **Techniques for Robot Control using Neural Implicit Value Functions.**
   Adithyavairavan Murali, Balakumar Sundaralingam, **Yun-Chun Chen**, Dieter Fox, Animesh Garg.
   US Patent Application No. 17/856,699.

Honors and Awards

Ph.D. Conference Travel Grant for ACM SIGGRAPH Asia 2024. 2024

Faculty of Arts and Science Program-level Fellowship, University of Toronto. 2023

Ph.D. Conference Travel Grant for NeurIPS 2022. 2022

Faculty of Arts and Science Program-level Fellowship, University of Toronto. 2022

Vector Institute Research Grant. 2022

University of Toronto Mississauga Travel Grant for CVPR 2022. 2022

Faculty of Arts and Science Program-level Fellowship, University of Toronto. 2021

Vector Institute Research Grant. 2021

Top 25% of Program Committee Members of AAAI 2021. 2021

Faculty of Arts and Science Program-level Fellowship, University of Toronto. 2020

Appier AI Scholarship for ICCV 2019. 2019

Appier AI Scholarship for CVPR 2019. 2019

Appier AI Scholarship for AAAI 2019. 2019

Third Place in IEEE Video and Image Processing (VIP) Cup. 2018

Teaching

University of Toronto

CSC 420: Introduction to Image Understanding. Winter 2025
Instructor: David Lindell.

CSC 111: Foundations of Computer Science II. Winter 2025
Instructor: Sadia Sharmin.

CSC 317: Computer Graphics. Fall 2024
Instructor: Karan Singh and David Levin.

CSC 420: Introduction to Image Understanding. Winter 2024
Instructor: Sanja Fidler.

CSC 420: Introduction to Image Understanding. Winter 2024
Instructor: David Lindell.

CSC 320: Introduction to Visual Computing. Winter 2024
Instructor: Kyros Kutulakos.

CSC 236: Introduction to the Theory of Computation. Fall 2023
Instructor: Francois Pitt.

CSC 420: Introduction to Image Understanding. Winter 2023
Instructor: Sanja Fidler.

CSC 420: Introduction to Image Understanding. Winter 2023
Instructor: David Lindell.

CSC 413/2516: Neural Networks and Deep Learning. Winter 2023
Instructors: Jimmy Ba and Bo Wang.

CSC 317: Computer Graphics. Fall 2022
Instructor: Karan Singh.

CSC 2521: Topics in Computer Graphics. Fall 2022
Instructor: Alec Jacobson.

CSC 375: Algorithmic Intelligence in Robotics. Winter 2022
Instructor: Animesh Garg.

CSC 413/2516: Neural Networks and Deep Learning. Winter 2022
Instructors: Jimmy Ba and Bo Wang.

CSC 413/2516: Neural Networks and Deep Learning. Winter 2021
Instructors: Jimmy Ba and Bo Wang.

National Taiwan University

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

Academic Service

Senior Program Committee

International Joint Conference on Artificial Intelligence (IJCAI) 2021

Program Committee / Conference Reviewer

Neural Information Processing Systems (NeurIPS)	2020, 2021, 2022, 2023, 2024
NeurIPS Datasets and Benchmarks Track	2022, 2023, 2024
International Conference on Learning Representations (ICLR)	2021, 2022, 2023, 2024, 2025
International Conference on Machine Learning (ICML)	2021, 2022, 2023, 2024, 2025
IEEE Conference on Computer Vision and Pattern Recognition (CVPR)	2020 – 2025
IEEE International Conference on Computer Vision (ICCV)	2019, 2021, 2023
European Conference on Computer Vision (ECCV)	2020, 2022, 2024
International Conference on 3D Vision (3DV)	2022
British Machine Vision Conference (BMVC)	2019, 2020, 2021, 2022, 2023, 2024

Asian Conference on Computer Vision (ACCV)	2020, 2022, 2024
IEEE Winter Conference on Applications of Computer Vision (WACV)	2021, 2022, 2023, 2024, 2025
ACM SIGGRAPH	2024
ACM SIGGRAPH Asia	2022, 2024
Eurographics	2025
IEEE International Conference on Robotics and Automation (ICRA)	2021
Conference on Robot Learning (CoRL)	2020
International Symposium on Robotics Research (ISRR)	2022
International Joint Conference on Artificial Intelligence (IJCAI)	2022, 2023, 2024, 2025
AAAI Conference on Artificial Intelligence (AAAI)	2020, 2021, 2022, 2023, 2024, 2025
Conference on Lifelong Learning Agents (CoLLAs)	2023, 2024
Learning on Graphs Conference (LoG)	2023, 2024
International Conference on Artificial Intelligence and Statistics (AISTATS)	2023, 2024, 2025
IEEE International Conference on Image Processing (ICIP)	2019
Gordon Research Conference/Seminar in Robotics (GRS)	2022

Journal Reviewer

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

Volunteer

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

Mentor

SIGGRAPH Grad School Application Mentorship Program	2022
Toronto Graduate Application Assistance Program	2022, 2023, 2024

References

Alec Jacobson
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Department of Computer Science
University of Toronto
Email: jacobson@cs.toronto.edu
Web: https://www.cs.toronto.edu/∼jacobson/

Vova Kim
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