Yu Xiang

Contact Information

Assistant Professor
Department of Computer Science
The University of Texas at Dallas
800 W. Campbell Road, Richardson, TX 75080

yu.xiang@utdallas.edu
http://yuxng.github.io/
Google Scholar
GitHub

Lab

Intelligent Robotics and Vision Lab — https://labs.utdallas.edu/irvl/

Research Interests

Robotics, Computer Vision, Machine Learning, Deep Learning

Education

University of Michigan, Ann Arbor, Michigan, USA — Sep 2010 – Dec 2015
Ph.D. in Electrical Engineering: Systems
Dissertation: 3D Object Representations for Recognition
Advisor: Prof. Silvio Savarese

Fudan University, Shanghai, China — Sep 2007 – Jul 2010
M.S. in Computer Science
Dissertation: Graphic Models for Semantic Context Modeling in Automatic Image Annotation
Advisor: Prof. Xiangdong Zhou

Fudan University, Shanghai, China — Sep 2003 – Jul 2007
B.S. in Computer Science

Experience

The University of Texas at Dallas, Richardson, Texas, USA — Aug 2021 – present
Assistant Professor

NVIDIA Research, Seattle, Washington, USA — Jun 2018 – Jul 2021
Senior Research Scientist

NVIDIA Research, Seattle, Washington, USA — Jan 2018 – May 2018
Postdoctoral Researcher

University of Washington, Seattle, Washington, USA — Aug 2016 – Dec 2017
Postdoctoral Researcher
- Advisor: Prof. Dieter Fox

Stanford University, Stanford, California, USA — Jan 2016 – Jul 2016
Postdoctoral Researcher
- Advisor: Prof. Silvio Savarese

Stanford University, Stanford, California, USA — Sep 2013 – Dec 2015
Visiting Student Researcher
- Advisor: Prof. Silvio Savarese

NEC Laboratories America, Inc., Cupertino, California, USA — Jun 2015 – Sep 2015
Summer Research Intern — May 2014 – Aug 2014
- Department: Media Analytics

Publications

1. **CaptainCook4D: A Dataset for Understanding Errors in Procedural Activities**
Rohith Peddi, Shivvrat Arya, Bharath Challa, Likhitha Pallapothula, Akshay Vyas, Bhavya Gouripeddi, Qifan Zhang, Jikai Wang, Vasundhara Komaragiri, Eric Ragan, Nicholas Ruozzi, **Yu Xiang**, Vibhav Gogate
In *NeurIPS 2024 Track on Datasets and Benchmarks (NeurIPS)*, 2024.

2. **MultiGripperGrasp: A Dataset for Robotic Grasping from Parallel Jaw Grippers to Dexterous Hands**
Luis Felipe Casas*, Ninad Khargonkar*, Balakrishnan Prabhakaran, **Yu Xiang** (*equal contribution)
In *IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)*, 2024.

3. **Grasping Trajectory Optimization with Point Clouds**
   Yu Xiang, Sai Haneesh Allu, Rohith Peddi, Tyler Summers, Vibhav Gogate
   In *IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)*, 2024.

4. **PROTO-CLIP: Vision-Language Prototypical Network for Few-Shot Learning**
   Jishnu Jaykumar P, Kamalesh Palanisamy, Yu-Wei Chao, Xinya Du, **Yu Xiang**
   In *IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)*, 2024.

5. **Segment Every Out-of-Distribution Object**
   Wenjie Zhao, Jia Li, Xin Dong, **Yu Xiang**, Yunhui Guo
   In *IEEE Conference on Computer Vision and Pattern Recognition (CVPR)*, 2024.

6. **SceneReplica: Benchmarking Real-World Robot Manipulation by Creating Reproducible Scenes**
   Ninad Khargonkar, Sai Haneesh Allu, Yangxiao Lu, Jishnu Jaykumar P, Balakrishnan Prabhakaran, **Yu Xiang**
   In *International Conference on Robotics and Automation (ICRA)*, 2024.

7. **RISeg: Robot Interactive Object Segmentation via Body Frame-Invariant Features**
   Howard H. Qian, Yangxiao Lu, Kejia Ren, Gaotian Wang, Ninad Khargonkar, **Yu Xiang**, Kaiyu Hang
   In *International Conference on Robotics and Automation (ICRA)*, 2024.

8. **Mean Shift Mask Transformer for Unseen Object Instance Segmentation**
   Yangxiao Lu, Yuqiao Chen, Nicholas Ruozzi, **Yu Xiang**
   In *International Conference on Robotics and Automation (ICRA)*, 2024.

9. **Deep Dependency Networks for Multi-Label Classification**
   Shivvrat Arya, **Yu Xiang**, Vibhav Gogate
   In *International Conference on Artificial Intelligence and Statistics (AISTATS)*, 2024.

10. **Self-Supervised Unseen Object Instance Segmentation via Long-Term Robot Interaction**
    Yangxiao Lu, Ninad Khargonkar, Zesheng Xu, Charles Averill, Kamalesh Palanisamy, Kaiyu Hang, Yunhui Guo, Nicholas Ruozzi, **Yu Xiang**
    In *Robotics: Science and Systems (RSS)*, 2023.

11. **FewSOL: A Dataset for Few-Shot Object Learning in Robotic Environments**
    Jishnu Jaykumar P, Yu-Wei Chao, **Yu Xiang**
    In *International Conference on Robotics and Automation (ICRA)*, 2023.

12. **NeuralGrasps: Learning Implicit Representations for Grasps of Multiple Robotic Hands**
    Ninad Khargonkar, Neil Song, Zesheng Xu, Balakrishnan Prabhakaran, **Yu Xiang**
    In *Conference on Robot Learning (CoRL)*, 2022.

13. **Few-shot Single-view 3D Reconstruction with Memory Prior Contrastive Network**
    Zhen Xing, Yijiang Chen, Zhixin Ling, Xiangdong Zhou, **Yu Xiang**
    In *European Conference on Computer Vision (ECCV)*, 2022.

14. **TALISMAN: Targeted Active Learning for Object Detection with Rare Classes and Slices using Submodular Mutual Information**
    Suraj Kothawade, Saikat Ghosh, Sumit Shekar, **Yu Xiang**, Rishabh Iyer
    In *European Conference on Computer Vision (ECCV)*, 2022.

15. **HandoverSim: A Simulation Framework and Benchmark for Human-To-Robot Object Handovers**
    Yu-Wei Chao, Chris Paxton, **Yu Xiang**, Wei Yang, Balakumar Sundaralingam, Tao Chen, Adithyavairavan Murali, Maya Cakmak and Dieter Fox
    In *International Conference on Robotics and Automation (ICRA)*, 2022.

16. **Hierarchical Policies for Cluttered-Scene Grasping with Latent Plans**
    Lirui Wang, Xiangyun Meng, **Yu Xiang** and Dieter Fox
    In *IEEE Robotics and Automation Letters (RA-L)*, 2022.

17. **iCaps: Iterative Category-level Object Pose and Shape Estimation**
    Xinke Deng*, Junyi Geng*, Timothy Bretl, **Yu Xiang** and Dieter Fox (*equal contribution)
    In *IEEE Robotics and Automation Letters (RA-L)*, 2022.

18. **RICE: Refining Instance Masks in Cluttered Environments with Graph Neural Networks**
Christopher Xie, Arsalan Mousavian, **Yu Xiang** and Dieter Fox
In *Conference on Robot Learning (CoRL)*, 2021.

19. **Goal-Auxiliary Actor-Critic for 6D Robotic Grasping with Point Clouds**
Lirui Wang, **Yu Xiang** and Dieter Fox
In *Conference on Robot Learning (CoRL)*, 2021.

20. **DexYCB: A Benchmark for Capturing Hand Grasping of Objects**
Yu-Wei Chao, Wei Yang, **Yu Xiang**, Pavlo Molchanov, Ankur Handa, Jonathan Tremblay, Yashraj Narang, Karl Van Wyk, Umar Iqbal, Stan Birchfield, Jan Kautz and Dieter Fox
In *IEEE Conference on Computer Vision and Pattern Recognition (CVPR)*, 2021.

21. **RGB-D Local Implicit Function for Depth Completion of Transparent Objects**
Luyang Zhu, Arsalan Mousavian, **Yu Xiang**, Hammad Mazhar, Jozef van Eenbergen, Shoubhik Debnath and Dieter Fox
In *IEEE Conference on Computer Vision and Pattern Recognition (CVPR)*, 2021.

22. **Learning Composable Behavior Embeddings for Long-horizon Visual Navigation**
Xiangyun Meng, **Yu Xiang** and Dieter Fox
In *IEEE Robotics and Automation Letters (RA-L)*, 2021.

23. **Unseen Object Instance Segmentation for Robotic Environments**
Christopher Xie, **Yu Xiang**, Arsalan Mousavian and Dieter Fox
In *IEEE Transactions on Robotics (T-RO)*, 2021.

24. **PoseRBPF: A Rao-Blackwellized Particle Filter for 6D Object Pose Tracking**
Xinke Deng, Arsalan Mousavian, **Yu Xiang**, Fei Xia, Timothy Bretl and Dieter Fox
In *IEEE Transactions on Robotics (T-RO)*, 2021.

25. **Learning RGB-D Feature Embeddings for Unseen Object Instance Segmentation**
Yu Xiang, Christopher Xie, Arsalan Mousavian and Dieter Fox
In *Conference on Robot Learning (CoRL)*, 2020.

26. **Manipulation Trajectory Optimization with Online Grasp Synthesis and Selection**
Lirui Wang, **Yu Xiang** and Dieter Fox
In *Robotics: Science and Systems (RSS)*, 2020.

27. **LatentFusion: End-to-End Differentiable Reconstruction and Rendering for Unseen Object Pose Estimation**
Keunhong Park, Arsalan Mousavian, **Yu Xiang** and Dieter Fox
In *IEEE Conference on Computer Vision and Pattern Recognition (CVPR)*, 2020.

28. **Scaling Local Control to Large-Scale Topological Navigation**
Xiangyun Meng, Nathan Ratliff, **Yu Xiang** and Dieter Fox
In *International Conference on Robotics and Automation (ICRA)*, 2020.

29. **Self-supervised 6D Object Pose Estimation for Robot Manipulation**
Xinke Deng, **Yu Xiang**, Arsalan Mousavian, Clemens Eppner, Timothy Bretl and Dieter Fox
In *International Conference on Robotics and Automation (ICRA)*, 2020.

30. **The Best of Both Modes: Separately Leveraging RGB and Depth for Unseen Object Instance Segmentation**
Christopher Xie, **Yu Xiang**, Arsalan Mousavian and Dieter Fox
In *Conference on Robot Learning (CoRL)*, 2019.

31. **PoseRBPF: A Rao-Blackwellized Particle Filter for 6D Object Pose Tracking**
Xinke Deng, Arsalan Mousavian, **Yu Xiang**, Fei Xia, Timothy Bretl and Dieter Fox
In *Robotics: Science and Systems (RSS)*, 2019.

32. **Object Discovery in Videos as Foreground Motion Clustering**
Christopher Xie, **Yu Xiang**, Dieter Fox and Zaid Harchaoui
In *IEEE Conference on Computer Vision and Pattern Recognition (CVPR)*, 2019.

33. **Neural Autonomous Navigation with Riemannian Motion Policy**
Xiangyun Meng, Nathan Ratliff, **Yu Xiang** and Dieter Fox
In *International Conference on Robotics and Automation (ICRA)*, 2019.

34. **Deep Object Pose Estimation for Semantic Robotic Grasping of Household Objects**
Jonathan Tremblay, Thang To, Balakumar Sundaralingam, **Yu Xiang**, Dieter Fox and Stan Birchfield
In *Conference on Robot Learning (CoRL)*, 2018.

35. **DeepIM: Deep Iterative Matching for 6D Pose Estimation**
Yi Li, Gu Wang, Xiangyang Ji, **Yu Xiang** and Dieter Fox
In *European Conference on Computer Vision (ECCV)*, 2018 **-Oral**.

36. **PoseCNN: A Convolutional Neural Network for 6D Object Pose Estimation in Cluttered Scenes**
Yu Xiang, Tanner Schmidt, Venkatraman Narayanan and Dieter Fox
In *Robotics: Science and Systems (RSS)*, 2018.

37. **Recurrent Autoregressive Networks for Online Multi-Object Tracking**
Kuan Fang, **Yu Xiang**, Xiaocheng Li and Silvio Savarese
In *IEEE Winter Conference on Applications of Computer Vision (WACV)*, 2018.

38. **DA-RNN: Semantic Mapping with Data Associated Recurrent Neural Networks**
Yu Xiang and Dieter Fox
In *Robotics: Science and Systems (RSS)*, 2017.

39. **Subcategory-aware Convolutional Neural Networks for Object Proposals and Detection**
Yu Xiang, Wongun Choi, Yuanqing Lin and Silvio Savarese
In *IEEE Winter Conference on Applications of Computer Vision (WACV)*, pp. 924–933, 2017.

40. **Anticipating Accidents in Dashcam Videos**
Fu-Hsiang Chan, Yu-Ting Chen, **Yu Xiang** and Min Sun
In *Asian Conference on Computer Vision (ACCV)*, pp. 136–153, 2016 **-Oral**.

41. **ObjectNet3D: A Large Scale Database for 3D Object Recognition**
Yu Xiang, Wonhui Kim, Wei Chen, Jingwei Ji, Christopher Choy, Hao Su, Roozbeh Mottaghi, Leonidas Guibas and Silvio Savarese
In *European Conference on Computer Vision (ECCV)*, pp. 160–176, 2016 **-Spotlight Oral**.

42. **Pose Estimation Errors, the Ultimate Diagnosis**
Carolina Redondo-Cabrera, Roberto López-Sastre, **Yu Xiang**, Tinne Tuytelaars and Silvio Savarese
In *European Conference on Computer Vision (ECCV)*, pp. 118–134, 2016.

43. **Deep Metric Learning via Lifted Structured Feature Embedding**
Hyun Oh Song, **Yu Xiang**, Stefanie Jegelka and Silvio Savarese
In *IEEE Conference on Computer Vision and Pattern Recognition (CVPR)*, pp. 4004–4012, 2016 **-Spotlight Oral**.

44. **Learning to Track: Online Multi-Object Tracking by Decision Making**
Yu Xiang, Alexandre Alahi and Silvio Savarese
In *International Conference on Computer Vision (ICCV)*, pp. 4705–4713, 2015 **-Oral**.

45. **Data-Driven 3D Voxel Patterns for Object Category Recognition**
Yu Xiang, Wongun Choi, Yuanqing Lin and Silvio Savarese
In *IEEE Conference on Computer Vision and Pattern Recognition (CVPR)*, pp. 1903–1911, 2015 **-Oral**.

46. **A Coarse-to-Fine Model for 3D Pose Estimation and Sub-category Recognition**
Roozbeh Mottaghi, **Yu Xiang** and Silvio Savarese
In *IEEE Conference on Computer Vision and Pattern Recognition (CVPR)*, pp. 418–426, 2015.

47. **Monocular Multiview Object Tracking with 3D Aspect Parts**
Yu Xiang*, Changkyu Song*, Roozbeh Mottaghi and Silvio Savarese (*equal contribution)
In *European Conference on Computer Vision (ECCV)*, pp. 220–235, 2014.

48. **Beyond PASCAL: A Benchmark for 3D Object Detection in the Wild**
Yu Xiang, Roozbeh Mottaghi and Silvio Savarese
In *IEEE Winter Conference on Applications of Computer Vision (WACV)*, pp. 75–82, 2014.

49. **Object Detection by 3D Aspectlets and Occlusion Reasoning**
Yu Xiang and Silvio Savarese
In *IEEE Workshop on 3D Representation and Recognition (3dRR)*, pp. 530–537, 2013.

50. **Object Co-detection**
Sid Yingze Bao, **Yu Xiang** and Silvio Savarese
In *European Conference on Computer Vision (ECCV)*, vol. 7572, pp. 86–101, 2014.

51. **Estimating the Aspect Layout of Object Categories**
Yu Xiang and Silvio Savarese
In *IEEE Conference on Computer Vision and Pattern Recognition (CVPR)*, pp. 3410–3417, 2012.

52. **Semantic Context Modeling with Maximal Margin Conditional Random Fields for Automatic Image Annotation**
Yu Xiang, Xiangdong Zhou, Zuotao Liu, Tat-Seng Chua and Chong-Wah Ngo
In *IEEE Conference on Computer Vision and Pattern Recognition (CVPR)*, pp. 3368–3375, 2010.

53. **Learning Contextual Metrics for Automatic Image Annotation**
Zuotao Liu, Xiangdong Zhou, **Yu Xiang** and Yan-Tao Zheng
In *Advances in Multimedia Information Processing - PCM*, vol. 6297, pp. 124–135, 2010.

54. **A Revisit of Generative Model for Automatic Image Annotation using Markov Random Fields**
Yu Xiang, Xiangdong Zhou, Zuotao Liu, Tat-Seng Chua and Chong-Wah Ngo
In *IEEE Conference on Computer Vision and Pattern Recognition (CVPR)*, pp. 1153–1160, 2009.

55. **Adaptive Model for Web Image Semantic Automatic Image Annotation**
Hongtao Xu, Xiangdong Zhou, **Yu Xiang** and Baile Shi
In *Journal of Software (in Chinese)*, vol. 21, no. 9, pp. 2183–2195, 2009.

56. **Exploiting Flickr's Related Tags for Semantic Annotation of Web Images**
Hongtao Xu, Xiangdong Zhou, **Yu Xiang** and Baile Shi
In *ACM International Conference on Image and Video Retrieval (CIVR)*, no. 46, 2009.

57. **Automatic Web Image Annotation via Web-Scale Image Semantic Space Learning**
Hongtao Xu, Xiangdong Zhou, Lan Lin, **Yu Xiang** and Baile Shi
In *Advances in Data and Web Management*, vol. 5446, pp. 211–222, 2009.

Teaching

CS 4391 Introduction to Computer Vision, University of Texas at Dallas, Dallas, Texas, USA
Spring 2025

CS 6301 Special Topics in Computer Science Introduction to Robot Manipulation and Navigation, University of Texas at Dallas, Dallas, Texas, USA Fall 2024

CS 4391 Introduction to Computer Vision, University of Texas at Dallas, Dallas, Texas, USA
Spring 2024

CS 6301 Special Topics in Computer Science: Introduction to Robot Manipulation and Navigation, University of Texas at Dallas, Dallas, Texas, USA Fall 2023

CS 6384 Computer Vision, University of Texas at Dallas, Dallas, Texas, USA Spring 2023

CS 6301 Special Topics in Computer Science: Introduction to Robot Manipulation and Navigation, University of Texas at Dallas, Dallas, Texas, USA Fall 2022

CS 6384 Computer Vision, University of Texas at Dallas, Dallas, Texas, USA Spring 2022

CS 6334 Virtual Reality, University of Texas at Dallas, Dallas, Texas, USA Fall 2021

Artificial Intelligence, University of Washington, Seattle, Washington, USA 2017
Guest Lectures for Prof. Dieter Fox

Computer Vision, University of Washington, Seattle, Washington, USA 2017

Guest Lecture for Prof. Linda Shapiro

Computer Vision, Stanford University, Stanford, California, USA 2016
Guest Lectures for Prof. Silvio Savarese

The C Programming Language, Fudan University, Shanghai, China Sep 2009 – Jan 2010
Teaching Assistant

Student Mentorship

Current PhD Students:

Jikai Wang, PhD Student, University of Texas at Dallas	Aug 2021 – present
Shivvrat Arya, PhD Student, University of Texas at Dallas	Aug 2021 – present
Ninad Arun Khargonkar, PhD Student, University of Texas at Dallas	Nov 2021 – present
Jishnu Jaykumar Padalunkal, PhD Student, University of Texas at Dallas	Aug 2021 – present
Qifan Zhang, PhD Student, University of Texas at Dallas	Jan 2022 – present
Yangxiao Lu, PhD Student, University of Texas at Dallas	May 2022 – present
Rohith Peddi, PhD Student, University of Texas at Dallas	Aug 2022 – present
Sai Haneesh Allu, PhD Student, University of Texas at Dallas	Aug 2022 – present
Luis Felipe Casas Murillo, PhD Student, University of Texas at Dallas	Aug 2023 – present

Current Master Students:

Ahad Jawaid, Master Student, University of Texas at Dallas	Mar 2024 – present
Animesh Maheshwari, Master Student, University of Texas at Dallas	Feb 2024 – present
Vinaya Bomnale, Master Student, University of Texas at Dallas	Feb 2024 – present
Saurav Nitin Dosi, Master Student, University of Texas at Dallas	Feb 2024 – present

Current Undergraduate Students:

Itay Kadosh, Undergraduate Student, University of Texas at Dallas	Jul 2024 – present
Govind Rangappa, Undergraduate Student, University of Texas at Dallas	Jan 2025 – present

Current Minor Students:

May Lynn Espinola, Tompkins High School, Katy, TX	May 2024 – present

Past Master Students:

Peter Driscoll, Master Student, University of Texas at Dallas	Feb 2024 – Dec 2024
Zhouhang Sun, Master Student, University of Texas at Dallas	Feb 2024 – May 2024
Cole Salvato, Master Student, University of Texas at Dallas	Aug 2021 – May 2024
Kamalesh Palanisamy, Master Student, UT Dallas → ASML	Aug 2021 – August 2023
Abhishek Rajendra Prasad, Master Student, UT Dallas → Goldman Sachs	Aug 2021 – August 2023
Priyanshi Shah, Master Student, UT Dallas → Goldman Sachs	Feb 2022 – August 2023
Lirui Wang, Master Student, University of Washington → PhD student at MIT	Sep 2017 – Jul 2021

Past Undergraduate Students:

Michael Ugochukwu, Undergraduate Student, University of Texas at Dallas	Sep 2024 – Dec 2024
Nikhil Narvekar, Undergraduate Student, University of Texas at Dallas	Jan 2023 – Feb 2024
Jesse Musa, Undergraduate Student, University of Texas at Dallas	Sep 2023 – Feb 2024
Shaurya Dwivedi, Undergraduate Student, University of Texas at Dallas	Jan 2023 – Feb 2024
Hamzah Dweik, Undergraduate Student, University of Texas at Dallas	Jan 2023 – Feb 2024
Zesheng Xu, Undergraduate Student, University of Texas at Dallas	Aug 2021 – Feb 2024
Willie Chalmers III, Undergraduate Student, University of Texas at Dallas	May 2022 – August 2023
Gagan Bhat, Undergraduate Student, University of Texas at Dallas → Netflix	Jan 2022 – Dec 2022

Past Minor Students:

Gaurav Salandri, High School Student, Wakeland High School, Frisco,	May 2022 – Feb 2024
Neil Song, High School Student, St. Mark's → Yale University	May 2021 – August 2023

NVIDIA Research Internship Program:

Xiangyun Meng, PhD Student, University of Washington	2021
Luyang Zhu, PhD Student, University of Washington	2020
Xinke Deng, PhD Student, UIUC	2018, 2019
Keunhong Park, PhD Student, University of Washington	2019
Corinne Jones, PhD Student, University of Washington	2019
Raluca Scona, PhD Student, Edinburgh Center for Robotics	2019
Fei Xia, PhD Student, Stanford University	2018

Rui Wang, PhD Student, TUM 2018
Christopher Xie, PhD Student, University of Washington 2018

Awards and Honors

NVIDIA Academic Grant Program Award 2024
Sony Research Award 2022
One of the 12 Best Papers in ECCV Selected for a IJCV Special Issue 2018
University of Washington CSE Postdoc Research Award 2016
ICCV Doctoral Consortium Travel Award 2015
Outstanding Master's Thesis Award of Shanghai 2012

Professional Service

Associate Editor
- IEEE Robotics and Automation Letters (RA-L) Oct 2021 – present
- International Conference on Intelligent Robots and Systems (IROS) 2022, 2023, 2024, 2025

Area Chair
- Robotics: Science and Systems (RSS) 2024, 2025
- Conference on Robot Learning (CoRL) 2022, 2023

Program Chair
- The Workshop for Neural Representation Learning for Robot Manipulation at CoRL, 2023
- The Visual Learning and Reasoning for Robotics Workshop at RSS, 2021
- The 3D Vision and Robotics Workshop at CVPR, 2021
- The Visual Learning and Reasoning for Robotic Manipulation Workshop at RSS, 2020
- 5th International IEEE Workshop on 3D Representation and Recognition at ICCV, 2015

Program Committee
- 4th International IEEE Workshop on 3D Representation and Recognition at ICCV, 2013

Tutorial Organizer
- 3D Object Geometry from Single Image Tutorial at International Conference on 3D Vision, 2016

Journal Reviewer
- International Journal of Robotics Research (IJRR)
- IEEE Robotics and Automation Letters (RA-L)
- IEEE Transactions on Pattern Analysis and Machine Intelligence (TPAMI)
- International Journal of Computer Vision (IJCV)
- Computer Vision and Image Understanding (CVIU)
- IEEE Transactions on Circuits and Systems for Video Technology (TCSVT)
- IEEE Transactions on Multimedia (TMM)
- IEEE Transactions on Signal Processing (TSP)

Conference Reviewer
- Robotics: Science and Systems Conference (RSS)
- IEEE International Conference on Robotics and Automation (ICRA)
- International Conference on Intelligent Robots and Systems (IROS)
- IEEE International Conference on Robot and Human Interactive Communication (ROMAN)
- IEEE Conference on Computer Vision and Pattern Recognition (CVPR)
- International Conference on Computer Vision (ICCV)
- European Conference on Computer Vision (ECCV)
- Asian Conference on Computer Vision (ACCV)
- British Machine Vision Conference (BMVC)
- International Conference on 3D Vision (3DV)
- Neural Information Processing Systems (NIPS)

Talks

1. **Building Intelligent Robots in Human Environments**
   XPeng, Shenzhen, China, 6/6/2024.

2. **Do We Need 3D Representations for Robot Manipulation?**
   1st Workshop on 3D Visual Representations for Robot Manipulation, ICRA, Yokohama, Japan, 5/17/2024.

3. **Connecting 6D Object Pose Estimation with Robot Manipulation**
   8th International Workshop on Recovering 6D Object Pose, ICCV, Paris, France, 10/23/2023.

4. **Object-Centric Perception for Robot Manipulation**
   Texas Regional Robotics Symposium, Rice University, 4/14/2023.

5. **Segmenting Unseen Objects for Robotic Grasping**
   Guest Lecture, University of Minnesota, Twin Cities (Online), 3/16/2023.

6. **Closed-loop 6D Robotic Grasping of Unseen Objects**
   Texas Regional Robotics Symposium, UT Austin, 4/29/2022.

7. **6D Robotic Grasping of Unseen Objects**
   Electronics and Telecommunications Research Institute, South Korea, 8/19/2021.

8. **Perceive, Plan, Act and Learn: Towards Intelligent Robots in Human Environments**
   UNC, 2/24/2021; UT Dallas, 3/16/2021.

9. **Learning RGB-D Feature Embeddings for Unseen Object Instance Segmentation**
   In NVIDIA Research, Seattle, Washington, 10/12/2020.

10. **PoseRBPF: A Rao-Blackwellized Particle Filter for 6D Object Pose Tracking**
    In University of Washington, Seattle, Washington, 9/27/2019.

11. **Object Perception for Robot Manipulation**
    In Toyota Research Institute, Cambridge, Massachusetts, 7/12/2019.

12. **PoseCNN: A Convolutional Neural Network for 6D Object Pose Estimation in Cluttered Scenes**
    In Robotics: Science and Systems (RSS), CMU, Pittsburgh, Pennsylvania, 6/26/2018.

13. **Perceiving the 3D World from Images and Videos**
    In Nvidia Research, Redmond, Washington, 11/07/2017; University of Michigan, 3/15/2018.

14. **3D Object Recognition and Scene Understanding from RGB-D Videos**
    In GRASP Lab at University of Pennsylvania, 10/11/2017; Microsoft Research, Redmond, 10/17/2017; Vision Lab at Stanford University, 10/23/2017.

15. **3D Object Recognition and Scene Understanding**
    In Mitsubishi Electric Research Laboratories, Boston, Massachusetts, 7/14/2017.

16. **DA-RNN: Semantic Mapping with Data Associated Recurrent Neural Networks**
    In Robotics: Science and Systems, Massachusetts Institute of Technology, Massachusetts, 7/13/2017.

17. **Subcategory-aware Convolutional Neural Networks for Object Proposals and Detection**
    In IEEE Winter Conference on Applications of Computer Vision, Santa Rosa, California, 3/29/2017.

18. **Tutorial on 3D Object Recognition**
    In International Conference on 3D Vision, Stanford University, 10/28/2016.

19. **3D Object Representations for Recognition**
    In Carnegie Mellon University, 3/28/2016; University of Toronto, 4/4/2016; Massachusetts Institute of Technology, 4/12/2016; University of California, Berkeley, 4/21/2016; University of Illinois at Urbana-Champaign, 5/5/2016; University of Washington, 5/31/2016.

20. **3D Object Detection and Pose Estimation**
    In the 1st International Workshop on Recovering 6D Object Pose in conjunction with ICCV, Santiago, Chile, 12/17/2015.

21. **Learning to Track: Online Multi-Object Tracking by Decision Making**
    In International Conference on Computer Vision, Santiago, Chile, 12/16/2015.

22. **Data-Driven 3D Voxel Patterns for Object Category Recognition**
    In IEEE Conference on Computer Vision and Pattern Recognition, Boston, Massachusetts, 06/08/2015.

23. **Monocular Multiview Object Tracking with 3D Aspect Parts**
    In the 1st Stanford-SNU Workshop on Automated Driving, Stanford University, 02/24/2015.

24. **Beyond PASCAL: A Benchmark for 3D Object Detection in the Wild**
    In IEEE Winter Conference on Applications of Computer Vision, Steamboat Springs, Colorado, 03/24/2014.

25. **Object Detection by 3D Aspectlets and Occlusion Reasoning**
In the 4th International IEEE Workshop on 3D Representation and Recognition in conjunction with ICCV, Sydney, Australia, 12/08/2013.

26. **Estimating the Aspect Layout of Object Categories**
In Midwest Vision Workshop, University of Illinois at Urbana-Champaign, 09/21/2012.

Funding

1. CIRC: Dev: SMILE:Scan to Multi-sensorial Interactive Learning Environment, NSF, co-PI, 07/01/2024 – 06/30/2026
2. Sony Research Award, PI, 09/01/2023 – 08/31/2024
3. Perceptually-enabled Task Guidance, DARPA, co-PI, 10/01/2021 – 09/30/2025

Skills and Languages

Programming Languages: Python, C/C++, CUDA

Libraries: PyTorch, Tensorflow, OpenCV, OpenGL, ROS

Operating Systems: Linux, Windows and Mac OS X

Languages: English, Chinese