

Associate Professor, [Fulton Entrepreneurial Professor](#)  
 School of Computing and Augmented Intelligence (SCAI)  
 Arizona State University  
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### Summary

Research Funding - Total External:  $\sim 6.5M$ ; Total PI/co-PI Recognition:  $\sim 3.2M$ ; as PI:  $\sim 2.5M$ ;  
 Publication - Top CS venues recognized by [CSrankings.org](#): 38; Journals: 15; [Google Scholar](#)  
 Mentorship - Ph.D. graduated: 3 (chair), 2 (co-chair); Ongoing 7 (chair), 2 (co-chair); Post-Doc  
 Mentored: 2 (1 ongoing);  
 Master thesis graduated: 11 (chair), 1 (co-chair);  
 Teaching: 2021 and 2022 Fulton Engineering Schools' TOP 5% Best Teachers recognition;  
 Tech-transfer - Patents: 4 (filed), 1 (pending); Founded Start-up: [ARGOS Vision](#).

### SELECTED MEDIA CONVERAGE

- [Foiling AI hackers with counterfactual reasoning. Amazon Science.](#)
- [City of Phoenix using new smart cameras to improve traffic safety. AZFamily.](#)
- [Argos Vision's AI-powered traffic cameras seek to make roads safer, more efficient.](#)
- [Engineering Evolutionary Steps in Automated Mobility](#)
- [Researchers demo VR finger tracking that recognizes air-drawn passcodes](#)
- [Artificial intelligence changes how athletes and fans experience sports. GlobalSport Matters](#)
- [Robot See, Robot Do: How Robots Can Learn New Tasks by Observing. MIT Tech. Review.](#)
- [Teaching a robot to 'cook' by showing it YouTube videos of cooking shows. Robohub.](#)
- [Step aside, Bourdain. Robot learns to cook by watching YouTube videos. Diamondback](#)
- [Robot Learns to Cook from YouTube Videos. Discover Magazine.](#)

### EDUCATION

*Ph.D.*, Computer Science University of Maryland, College Park, MD, USA  
 Thesis: Manipulation Action Understanding for Observation and Execution Dec. 2015  
 Yiannis Aloimonos, (Chair), Cornelia Fermüller (Co-chair) John Baras, Hal Daumé III, Don Perlis.

*M.S.*, Computer Science University of Maryland, College Park, MD, USA May. 2013

*B.E.*, Computer Science Zhejiang University, Hangzhou, Zhejiang, China June 2010

### PROFESSIONAL/RESEARCH EXPERIENCE

*Faculty, School of Computing and Augmented Intelligence,*  
*Arizona State University* Aug 2016 – Now  
 Associate Professor, Aug 2022 – Now  
 Assistant Professor, Aug 2016 – Aug 2022

Honors Faculty, Barrett, the Honors College

Founder and Director, ASU Active Perception Group (APG)

Tech Lead, Situation Awareness, [Institute of Automated Mobility](#), Arizona Commerce Authority  
Aug 2019 – Now

Thrust Lead for Awareness for Autonomous Vehicles Thrust of the Advanced Communications Technologies [Science and Technology Center \(STC\) within the New Economy Initiative \(NEI\)](#) Oct 2022 – Now

Postdoctoral Associate, Computer Vision Lab, University of Maryland Dec 2015 – Aug 2016

- Developing original algorithms for robot visual learning systems, mentoring undergraduate and graduate students for academic projects and leading a group of students for implementing a robotic house assistant system.

Graduate Research Assistant, Computer Vision Lab, University of Maryland 2010 – 2015

- Computer Vision, Robot Vision, especially exploring visual primitives in human action understanding from visual input, grounding them by natural language as well as high-level reasoning over the primitives for intelligent agents, aka. Robots.

Teaching Assistant, Computer Science, University of Maryland Aug 2010 – July 2011

- Taught Windows based and Linux based Operating Systems courses.

Undergraduate Research Assistant, Visual Interaction and Perception Analysis group, Eagle Lab, Zhejiang University August 2008 – August 2010

- Worked on visual attention analysis from image statistics and its applications.

Undergraduate Team Member, Robocup Humanoid team, National Key Lab of Control Technology, Zhejiang University September 2007 – August 2010

- Worked on vision system for humanoid robots, including object recognition and tracking, robot localization. Member of Robocup 2009 humanoid league team (ZJUDancer, final 8).

## SELECTED AWARDS AND HONORS

- The NSF Faculty Early Career Development (CAREER) Award (NSF IIS Robust Intelligence Program #1750082), 2018-2023. The winning project was “CAREER: Visual Recognition with Knowledge”
- 2021 and 2022 Fulton Engineering Schools’ TOP 5% Best Teaching recognition
- Samsung Research Center (SEC) Faculty Collaboration Research (2021: 200k\$ total).
- Amazon AWS Machine Learning Research Award (2019: 40k\$ + 30k\$ AWS research credits).
- Team leader, the first AI world cup (KAIST), AI commentator track winner (with 5k\$ prize).
- Verisk AI faculty research award (2017: 40k\$ and 2018: 50k\$).
- The 2018 round of the inaugural Global Sport Institute (GSI) “Sports 2036” Grant. The winning topic was “Non-invasive Performance Tracking with Smart Cameras”, 2018.
- Adobe University research collaboration awards, summer, fall 2017, spring 2018, fall 2018.
- ASU The Keen Professorship, spring and fall 2017. The winning topic was “Inspiring the Entrepreneurial Desire in a Perception and Robotics Course”.
- Qualcomm innovation fellowship winner, 2011. The winning research was “Robots Need Language: A computational model for the integration of vision, language and action”.

- Dean's Fellowship, Computer Science Department, University of Maryland College Park, 2010, 2011.
- Excellent Bachelor Thesis, Zhejiang University, China. Thesis: *Natural Image Statistics and Low Level Feature based Visual Attention Analysis*, September 2010.
- Microsoft Research Asia Young Researcher Scholarship, Microsoft Research Asia, May 2009.
- Member of Robocup team ZJUDancer, Champion at ChinaOpen humanoid league , 2008-2010; Top eight at World Cup humanoid league, 2009 and 2010.

## PUBLICATIONS AND INTELLECTUAL PROPERTY

(In reverse chronological sequence)

### Co-Editor for Books

- 1 Co-Author, [Fundamentals of Connected and Automated Vehicles](#), published by SAE

### Co-Editor for Thematic Journal Issues

- 1 Associate Editor [IEEE Robotics and Automation Letters](#) [2019 Impact factor: 3.6]
- 2 [Algorithms and Technologies towards Robotic Food Manipulation](#). Co-editor, Frontiers journal Special Research Topic.
- 3 [Special Issue on Semantic Policy and Action Representations for Autonomous Robots, special issue of Robotics and Autonomous Systems](#). Karinne Ramirez-Amaro, Yezhou Yang, Neil T. Dantam, Eren Erdal Aksoy and Gordon Cheng. Editor-in-Chief: Gaurav Sukhatme. Publication: Nov. 2018. [2017 Impact factor: 2.638]
- 4 Fine-grained Visual Understanding and Reasoning, special issue of Neurocomputing (Elsevier). Jun Yu, Yezhou Yang, Fionn Murtagh, Xinbo Gao. Publication: Jul. 2019. [2017 Impact factor: 3.241]

### Journal Publications From ASU (Published, In Press, and/or Accepted)

- JA1 **Ye, Xin**, and Yezhou Yang\*. Efficient Robotic Object Search via HIEM: Hierarchical Policy Learning with Intrinsic-Extrinsic Modeling. *IEEE Robotics and Automation Letters* 6, no. 3 (2021): 4425-4432.
- JA2 Gunasekar, Kausic, Qiang Qiu, and Yezhou Yang\*. Low to High Dimensional Modality Hallucination Using Aggregated Fields of View. *IEEE Robotics and Automation Letters* 5, no. 2 (2020): 1983-1990.
- JA3 **Xin Ye**, Zhe Lin, Joon-Young Lee, Jianming Zhang, Shibin Zheng, Yezhou Yang\*. GAPLE: Generalizable Approaching Policy LEarning for Robotic Object Searching in Indoor Environment, *IEEE Robotics and Automation Letters* 4, no. 4 (2019): 4003-4010.
- JA4 **Xin Ye**, Zhe Lin, Yezhou Yang\*. Robot Learning of Manipulation Activities with Overall Planning through Precedence Graph, *the Special Issue on Semantic Policy and Action Representations for Autonomous Robots, Robotics and Autonomous Systems* 116 (2019): 126-135.
- JA5 Ramirez-Amaro, Karinne\*, Yezhou Yang, and Gordon Cheng. A survey on semantic-based methods for the understanding of human movements. *Robotics and Autonomous Systems* 119 (2019): 31-50.

- JA6 Jing, Yongcheng, Yezhou Yang, Zunlei Feng, Jingwen Ye, Yizhou Yu, and Mingli Song\*. "Neural style transfer: A review." *IEEE transactions on visualization and computer graphics* 26, no. 11 (2019): 3365-3385.
- JA7 **Izadyyazdanabadi, Mohammadhassan** and Belykh, Evgenii and Mooney, Michael and Martirosyan, Nikolay and Eschbacher, Jennifer and Nakaji, Peter and Preul, Mark C and Yang, Yezhou\*. [Convolutional Neural Networks: Ensemble Modeling, Fine-Tuning and Unsupervised Semantic Localization for Neurosurgical CLE Images](#), *Journal of Visual Communication and Image Representation (JVCI)*, Vol. 50, Page 10-20, 2018
- JA8 **Somak Aditya**, Chitta Baral, Yezhou Yang, Cornelia Fermuller, Yiannis Aloimonos\*. [Image Understanding using vision and reasoning through Scene Description Graph.](#), *Journal of Computer Vision and Image Understanding (CVIU)* (2018)
- JA9 **Izadyyazdanabadi, Mohammadhassan**, Evgenii Belykh, Michael Mooney, Jennifer Eschbacher, Peter Nakaji, Yezhou Yang, and Mark Preul\*. "Prospects for Theranostics in Neurosurgical Imaging: Empowering Confocal Laser Endomicroscopy Diagnostics via Deep Learning." *Frontiers in Oncology* 8 (2018): 240.
- JA10 Cornelia Fermuller\*, Fang Wang, Yezhou Yang, Konstantinos Zampogiannis, Yi Zhang, Francisco Barranco, Michael Pfeiffer. [Prediction of Manipulation Actions](#), *International Journal of Computer Vision (IJCV)*, Vol. , No. , 2017
- JA11 **Mohammadhassan Izadyyazdanabadi**, Evgenii Belykh, Nikolay Martirosyan, Jennifer Eschbacher, Peter Nakaji, Yezhou Yang, and Mark C. Preul\*. Improving utility of brain tumor confocal laser endomicroscopy: objective value assessment and diagnostic frame detection with convolutional neural networks. *Proc. SPIE*, 2017.

Journal Publications Prior to ASU (Published, In Press, and/or Accepted)

- JP1 Yezhou Yang\*, Cornelia Fermuller and Yiannis Aloimonos. [A Cognitive System for Understanding Human Manipulation Actions](#), *Advances in Cognitive Systems*, Volume 3, page 47-67.
- JP2 E. E. Aksoy, E. Ovchinnikova, A. Orhan, Yezhou Yang and T. Asfour\*. Unsupervised Linking of Visual Features to Textual Descriptions in Long Manipulation Activities, *IEEE Robotics and Automation Letters (RA-L)* with ICRA presentation, Vol. , No. , 2017
- JP3 Mingli Song\*, Dapeng Tao, Chun Chen, Jiajun Bu, Yezhou Yang. Color-to-gray based on chance of happening preservation, *Neurocomputing*, 2013.
- JP4 Mingli Song\*, Chun Chen, Senlin Wang, Yezhou Yang. Low-Level and High-Level Prior Learning for Visual Saliency Estimation, *Information Sciences*, 2013.

Journal Editorials

- 1 Yu, Jun, Yezhou Yang, Fionn Murtagh, and Xinbo Gao. "Fine-grained visual understanding and reasoning." *Neurocomputing* 398 (2020): 408-410.

Refereed Conference Publications From ASU

- CA1 **Tejas Gokhale**, Rushil Anirudh, Jayaraman J. Thiagarajan, Bhavya Kailkhura, Chitta Baral, and Yezhou Yang. "Improving Diversity with Adversarially Learned Transformations for Domain Generalization" *The IEEE Winter Conference on Applications of Computer Vision (WACV)*, 2023

- CA2 **Maitreya Patel, Tejas Gokhale, Chitta Baral, and Yezhou Yang.** "CRIPP-VQA: Counterfactual Reasoning about Implicit Physical Properties via Video Question Answering" *Conference on Empirical Methods in Natural Language Processing (EMNLP), 2022*
- CA3 **Tejas Gokhale, Abhishek Chaudhary, Pratyay Banerjee, Chitta Baral, and Yezhou Yang.** "Semantically Distributed Robust Optimization for Vision-and-Language Inference." *In Findings of the Association for Computational Linguistics: ACL 2022, pp. 1493-1513. 2022.*
- CA4 **Luo, Yiran, Pratyay Banerjee, Tejas Gokhale, Yezhou Yang, and Chitta Baral.** "To Find Waldo You Need Contextual Cues: Debiasing Who's Waldo." *In Proceedings of the 60th Annual Meeting of the Association for Computational Linguistics (Volume 2: Short Papers), pp. 355-361. 2022.*
- CA5 **Buddareddygari, Prasanth, Travis Zhang, Yezhou Yang, and Yi Ren.** "Targeted Attack on Deep RL-based Autonomous Driving with Learned Visual Patterns." *In 2022 International Conference on Robotics and Automation (ICRA), pp. 10571-10577. IEEE, 2022.*
- CA6 **Banerjee, Pratyay, Tejas Gokhale, Yezhou Yang, and Chitta Baral.** "Weakly Supervised Relative Spatial Reasoning for Visual Question Answering." *International Conference on Computer Vision (ICCV) 2021.*
- CA7 **Fang, Zhiyuan, Jianfeng Wang, Xiaowei Hu, Lin Liang, Zhe Gan, Lijuan Wang, Yezhou Yang, and Zicheng Liu.** "Injecting semantic concepts into end-to-end image captioning." *In Proceedings of the IEEE/CVF Conference on Computer Vision and Pattern Recognition, pp. 18009-18019. 2022.*
- CA8 **Fang, Zhiyuan, Jianfeng Wang, Lijuan Wang, Lei Zhang, Yezhou Yang, and Zicheng Liu.** "Compressing Visual-linguistic Model via Knowledge Distillation." *the International Conference on Computer Vision (ICCV) 2021.*
- CA9 **Feinglass, Joshua, and Yezhou Yang.** "SMURF: SeMantic and linguistic UndeRstanding Fusion for Caption Evaluation via Typicality Analysis." *the annual meeting of the Association for Computational Linguistics (ACL) 2021.*
- CA10 **Banerjee, Pratyay, Tejas Gokhale, Yezhou Yang, and Chitta Baral.** "WeaQA: Weak Supervision via Captions for Visual Question Answering." *the annual meeting of the Association for Computational Linguistics (ACL) 2021, Findings*
- CA11 **Ye, Xin, and Yezhou Yang.** "Hierarchical and partially observable goal-driven policy learning with goals relational graph." *the International Conference on Computer Vision and Pattern Recognition (CVPR), 2021*
- CA12 **Ye, Xin, and Yezhou Yang.** "Efficient Robotic Object Search via HIEM: Hierarchical Policy Learning with Intrinsic-Extrinsic Modeling." *IEEE International Conference on Robotics and Automation (ICRA) 2021.*
- CA13 **Lu, Duo, Varun C. Jammula, Steven Como, Jeffrey Wishart, Yan Chen, and Yezhou Yang.** "CAROM-Vehicle Localization and Traffic Scene Reconstruction from Monocular Cameras on Road Infrastructures." *IEEE International Conference on Robotics and Automation (ICRA) 2021.*
- CA14 **Kim, Changhoon, Yi Ren, and Yezhou Yang.** "Decentralized Attribution of Generative Models." *the International Conference on Learning Representations (ICLR) (2021).*
- CA15 **Fang, Zhiyuan, Jianfeng Wang, Lijuan Wang, Lei Zhang, Yezhou Yang, and Zicheng Liu.** "SEED: Self-supervised Distillation For Visual Representation." *the International Conference on Learning Representations (ICLR) (2021).*

- CA16 **Gokhale, Tejas**, Rushil Anirudh, Bhavya Kailkhura, Jayaraman J. Thiagarajan, Chitta Baral, and Yezhou Yang. "Attribute-Guided Adversarial Training for Robustness to Natural Perturbations." In *Proceedings of the AAAI Conference on Artificial Intelligence*, 2021.
- CA17 **Sampat, Shailaja Keyur**, Akshay Kumar, Yezhou Yang, and Chitta Baral. "CLEVR\_HYP: A Challenge Dataset and Baselines for Visual Question Answering with Hypothetical Actions over Images." *2021 Annual Conference of the North American Chapter of the Association for Computational Linguistics (NAACL) 2021*.
- CA18 **Fang, Zhiyuan, Tejas Gokhale**, Pratyay Banerjee, Chitta Baral, and Yezhou Yang. Video2commonsense: Generating commonsense descriptions to enrich video captioning. *Conference on Empirical Methods in Natural Language Processing (EMNLP) 2020*.
- CA19 **Tejas Gokhale**, Pratyay Banerjee, Chitta Baral, and Yezhou Yang. MUTANT: A Training Paradigm for Out-of-Distribution Generalization in Visual Question Answering. *Conference on Empirical Methods in Natural Language Processing (EMNLP) 2020*.
- CA20 **Sampat, Shailaja**, Yezhou Yang, and Chitta Baral. Diverse Visuo-Linguistic Question Answering (DVLQA) Challenge. *Conference on Empirical Methods in Natural Language Processing (EMNLP) 2020, Findings*.
- CA21 **Tejas Gokhale**, Pratyay Banerjee, Chitta Baral, and Yezhou Yang. VQA-LOL: Visual question answering under the lens of logic. *European Conference on Computer Vision (ECCV) 2020*
- CA22 **Zhiyuan Fang**, Zhe Wang, Jun Wang, and Yezhou Yang. ViTAA: Visual-Textual Attributes Alignment in Person Search by Natural Language. *European Conference on Computer Vision (ECCV) 2020*
- CA23 **Bajestani, Mohammad Farhadi**, Yezhou Yang. TKD: Temporal Knowledge Distillation for Active Perception. *The IEEE Winter Conference on Applications of Computer Vision (WACV), 2020*
- CA24 **Zhiyuan Fang**, Shu Kong, Charless Fowlkes, Yezhou Yang. Modularized Textual Grounding for Counterfactual Resilience, *the International Conference on Computer Vision and Pattern Recognition (CVPR), 2019*
- CA25 **Aditya, Somak**, Yezhou Yang, and Chitta Baral. Integrating Knowledge and Reasoning in Image Understanding. In *the 28th International Joint Conference on Artificial Intelligence (IJCAI), 2019*.
- CA26 **Aditya, Somak, Rudra Saha**, Yezhou Yang, and Chitta Baral. Spatial Knowledge Distillation to aid Visual Reasoning. In *2019 IEEE Winter Conference on Applications of Computer Vision (WACV)*, pp. 227-235. *IEEE, 2019*.
- CA27 Ren, Yi, Steven Elliott, Yiwei Wang, Yezhou Yang, and Wenlong Zhang. "How Shall I Drive? Interaction Modeling and Motion Planning towards Empathetic and Socially-Graceful Driving." *IEEE International Conference on Robotics and Automation (ICRA) 2019*.
- CA28 **Xin Ye**, Zhe Lin, Haoxiang Li, Shibin Zheng and Yezhou Yang. Active Object Perceiver: Recognition-guided Policy Learning for Object Searching on Mobile Robots, *the IEEE/RSJ International Conference on Intelligent Robots and Systems, 2018*
- CA29 **Somak Aditya**, Yezhou Yang, Chitta Baral, Yiannis Aloimonos. [Combining Knowledge and Reasoning through Probabilistic Soft Logic for Image Puzzle Solving](#) , *Conference on Uncertainty in Artificial Intelligence (UAI), 2018*

- CA30 **Mohammadhassan Izadyazdanabadi**<sup>1</sup>, Evgenii Belykh, Claudio Cavallo, Xiao-chun Zhao, Sirin Gandhi, Leandro Borba Moreira, Jennifer Eschbacher, Peter Nakaji, Mark C. Preul and Yang, Yezhou\*. [Weakly-Supervised Learning-Based Feature Localization in Confocal Laser Endomicroscopy Glioma Images.](#), *21st International Conference On Medical Image Computing & Computer Assisted Intervention (MICCAI) 2018*
- CA31 Zunlei Feng, Zhenyun Yu, Yezhou Yang, Yongcheng Jing, Junxiao Jiang, and Mingli Song\*. "Interpretable Partitioned Embedding for Customized Multi-item Fashion Outfit Composition." *In Proceedings of the 2018 ACM on International Conference on Multimedia Retrieval*, pp. 143-151. ACM, 2018.
- CA32 Jie Song, Chengchao Shen, Yezhou Yang, Yang Liu, and Mingli Song\*. Transductive Unbiased Embedding for Zero-Shot Learning. *IEEE International Conference on Computer Vision and Pattern Recognition (CVPR) 2018*.
- CA33 **Simon Stepputtis**, Yezhou Yang, Heni Ben Amor. Extrinsic Dexterity through Active Slip Control using Deep Predictive Models, *IEEE International Conference on Robotics and Automation (ICRA) 2018*.
- CA34 **Somak Aditya**, Yezhou Yang, Chitta Baral. [Explicit Reasoning over End-to-End Neural Architectures for Visual Question Answering](#), *the Thirty-Second AAAI Conference on Artificial Intelligence 2018*.
- CA35 Zhang, Wenlong, Yezhou Yang, and Yi Ren. "Towards Understanding Human Decisions in Human-Robot Interactions." *In ASME 2017 Dynamic Systems and Control Conference*, pp. V001T30A009-V001T30A009. American Society of Mechanical Engineers, 2017.
- CA36 Wang, Yiwei, **Xin Ye**, Yezhou Yang, and Wenlong Zhang. "Collision-free trajectory planning in human-robot interaction through hand movement prediction from vision." *In Humanoid Robotics (Humanoids), 2017 IEEE-RAS 17th International Conference on*, pp. 305-310. IEEE, 2017.
- CA37 Chengxi Ye, Yezhou Yang, Cornelia Fermuller, Yiannis Aloimonos. [What Can I Do Around Here? Deep Functional Scene Understanding for Cognitive Robots](#), *IEEE International Conference on Robotics and Automation (ICRA) 2017*.
- CA38 Wentao Luan, Yezhou Yang, Cornelia Fermuller, John Baras. Fast Task-Specific Target Detection via Graph Based Constraints Representation and Checking, *IEEE International Conference on Robotics and Automation (ICRA) 2017*.
- CA39 Wentao Luan, Yezhou Yang, Cornelia Fermuller, John Baras. [Reliable Attribute-Based Object Recognition Using High Predictive Value Classifiers](#), *European Conference on Computer Vision (ECCV) 2016*.
- CA40 Ren Mao, John Baras, Yezhou Yang, Cornelia Fermuller. [Co-active Learning to Adapt Humanoid Movement for Manipulation](#), *IEEE-RAS International Conference on Humanoid Robots (Humanoids) 2016*.

Refereed Conference Publications Prior to ASU

- CP1 Somak Aditya, Chitta Baral, **Yezhou Yang**, Cornelia Fermuller, Yiannis Aloimonos. [DeepIU: An Architecture for Image Understanding](#), *Advances in Cognitive Systems (ACS) 2016*.
- CP2 Chengxi Ye, Chen Zhao, **Yezhou Yang**, Cornelia Fermuller, Yiannis Aloimonos. [LightNet: A Versatile, Standalone Matlab-based Environment for Deep Learning](#), *The Open Source Software Competition, ACM MM 2016*.

- CP3 **Yezhou Yang**, Cornelia Fermuller, Yiannis Aloimonos and Eren Erdal Aksoy. [Learning the Semantics of Manipulation Action](#), the annual meeting of the Association for Computational Linguistics (ACL) 2015.
- CP4 **Yezhou Yang**, Cornelia Fermuller, Yi Li and Yiannis Aloimonos. [Grasp Type Revisited: A Modern Perspective on A Classical Feature for Vision](#), IEEE International Conference on Computer Vision and Pattern Recognition (CVPR) 2015.
- CP5 Yi Zhang, **Yezhou Yang**, Cornelia Fermuller and Yiannis Aloimonos. [Does the grasp type reveal action intention?](#) The Vision Sciences Society Annual Meeting (VSS) 2015.
- CP6 Konstantinos Zampogiannis, **Yezhou Yang**, Cornelia Fermuller and Yiannis Aloimonos. [Learning the Spatial Semantics of Manipulation Actions through Preposition Grounding](#), IEEE International Conference on Robotics and Automation (ICRA) 2015.
- CP7 Somak Aditya, **Yezhou Yang**, Chitta Baral, Cornelia Fermuller, Yiannis Aloimonos. [Visual common-sense for scene understanding using perception, semantic parsing and reasoning](#). Common-sense, AAAI Spring Symposium 2015.
- CP8 **Yezhou Yang**, Yi Li, Cornelia Fermuller and Yiannis Aloimonos. [Robot Learning Manipulation Action Plans by “Watching” Unconstrained Videos From the World Wide Web](#), The Twenty-Ninth AAAI Conference on Artificial Intelligence (AAAI) 2015.
- CP9 **Yezhou Yang**, Anupam Guha, Cornelia Fermuller and Yiannis Aloimonos. [Manipulation Action Tree Bank: A Knowledge Resource for Humanoids](#), IEEE-RAS International Conference on Humanoid Robots (HUMANOIDS) 2014.
- CP10 Ren Mao, **Yezhou Yang**, Cornelia Fermuller, Yiannis Aloimonos and John Baras. [Learning Hand Movements from Markerless Demonstrations for Humanoid Tasks](#), IEEE-RAS International Conference on Humanoid Robots (HUMANOIDS) 2014.
- CP11 **Yezhou Yang**, Cornelia Fermuller and Yiannis Aloimonos. [Detection of Manipulation Action Consequences \(MAC\)](#), International Conference on Computer Vision and Pattern Recognition (CVPR) 2013.
- CP12 **Yezhou Yang**, Ching L. Teo, Cornelia Fermuller and Yiannis Aloimonos. [Robots with Language: Multi-Label Visual Recognition Using NLP](#), IEEE International Conference on Robotics and Automation (ICRA) 2013.
- CP13 Anupam Guha, **Yezhou Yang**, Cornelia Fermuller and Yiannis Aloimonos. [Minimalist Plans for Interpreting Manipulation Actions](#), IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS) 2013.
- CP14 Xiaodong Yu, C. L. Teo, **Yezhou Yang**, Cornelia Fermuller and Yiannis Aloimonos. [Action Attribute Detection from Sports Videos with Contextual Constraints](#), British Machine Vision Conference (BMVC) 2013.
- CP15 Douglas Summers-Stay, Ching L. Teo, **Yezhou Yang**, Cornelia Fermuller and Yiannis Aloimonos. [Using a Minimal Action Grammar for Activity Understanding in the Real World](#), IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS) 2012..
- CP16 Ching L. Teo, **Yezhou Yang**, Cornelia Fermuller, Yiannis Aloimonos. Synergistic Methods for using Language in Robotics PerMIS 12.
- CP17 Ching L. Teo, **Yezhou Yang**, Hal Daume III and Yiannis Aloimonos. [Towards a Watson That Sees: Language-Guided Action Recognition for Robots](#), IEEE International Conference on Robotics and Automation (ICRA) 2012.



- CP18 Xiaodong Yu, Ching L. Teo, **Yezhou Yang**, Cornelia Fermuller, Yiannis Aloimonos. [Active Scene Recognition with Vision and Language](#). *International Conference on Computer Vision (ICCV) 2011*.
- CP19 **Yezhou Yang**, Ching L. Teo, Hal Daume III and Yiannis Aloimonos. [Corpus-Guided Sentence Generation of Natural Images](#), *Conference on Empirical Methods in Natural Language Processing (EMNLP) 2011*.
- CP20 Ching L. Teo, **Yezhou Yang**, Hal Daume III, Cornelia Fermuller and Yiannis Aloimonos. *A Corpus-Guided Framework for Robotic Visual Perception. AAAI Workshop on Language-Action Tools for Cognitive Artificial Agents. 2011*.
- CP21 **Yezhou Yang**, M. Song, J. Bu, C. Chen, C. Jin. [Color to Gray: Attention Preservation](#), *Fourth Pacific-Rim Symposium on Image and Video Technology (PSIVT) 2010*.
- CP22 **Yezhou Yang**, M. Song, N. Li, J. Bu, C. Chen. [What is the Chance of Happening: A New Way to Predict Where People Look](#), *European Conference on Computer Vision (ECCV) 2010*.
- CP23 **Yezhou Yang**, M. Song, N. Li, J. Bu, C. Chen. [Visual attention analysis by pseudo gravitational field](#), *the seventeen ACM international conference on Multimedia (ACMMM) 2009*.

#### Intellectual Property from ASU

- PA1 Evgenii Belykh, **Mohammadhassan Izady Yazdanabadi**, Mark Preul, Yezhou Yang, "Histology Style Transfer for Confocal Laser Endomicroscopy Images", PCT/US20/15332 filed Jan 28th 2020.
- PA2 Qiushi Fu, Yezhou Yang, and Marco Santello. "Computer-Vision-Based Clinical Assessment of Upper Extremity Function.", US Patent number 10,849,532 Filed.
- PA3 **Farhadi, Mohammad**, and Yezhou Yang, "TKD: Temporal Knowledge Distillation for Active Perception", Provisional patent filed.
- PA4 **Kim, Changhoon**, Yi Ren, and Yezhou Yang. "Decentralized Attribution of Generative Models", Pending.
- PA5 Wang, Yiwei, **Xin Ye**, Yezhou Yang, and Wenlong Zhang. "Collision-free trajectory planning in human-robot interaction through hand movement prediction from vision.", Pending.

#### Intellectual Property prior to ASU

- PP1 Aloimonos, Yiannis, Cornelia Fermuller, Yezhou Yang, Yi LI, and Katerina Pastra. "LEARNING MANIPULATION ACTIONS FROM UNCONSTRAINED VIDEOS." U.S. Patent Application 15/011,025, filed August 4, 2016.

## INVITED TALKS/PRESENTATIONS

#### Invited Presentations - External

- 1 Tech talk "Visual Recognition beyond Appearance, and its Robotic Applications ", at UC San Diego Contextual Robotics Institute Seminar; Oct, 2022
- 2 University Research session talk "towards Robust and Socially-Adept Autonomous Vehicles Through Vehicle Trajectory Sensing for Safety Assessment, ITS AZ conference, Mesa, AZ; Sep, 2021

- 3 AI and Art talk "Perceiving beyond Visual Appearances: from Artistic techniques towards Robust AI", at Computer Science department at University of Luxembourg, online seminar on AI & Art; May, 2021
- 4 Tech talk "Visual Recognition beyond Appearance, and its Robotic Applications ", at UC Santa Cruz Multimodal Deep Learning Seminar Series; May, 2021
- 5 Tech talk "Visual Recognition beyond Appearance, and its Robotic Applications ", at AiBee AI Seminar series; April, 2021
- 6 Tech talk "Visual Recognition beyond Appearance, and its Robotic Applications ", at Michigan State University CS department seminar; April, 2021.
- 7 Tech talk "Visual Recognition beyond Appearance, and its Robotic Applications ", at UPenn Grasp Lab Seminar March, 2021.
- 8 Tech talk "Visual Recognition beyond Appearance, and its Robotic Applications ", at ML Seminar at Oregon State University; March, 2021.
- 9 Tech talk "Visual Recognition beyond Appearance, and its Robotic Applications ", at ML Seminar at UIUC; March, 2021.
- 10 Tech talk "Visual Recognition beyond Appearance, and its Robotic Applications ", at ML Seminar at Purdue; Feb, 2021.
- 11 Tech talk "Visual Recognition beyond Appearance, and its Robotic Applications ", at ML Seminar at Facebook AI Research; Feb, 2021.
- 12 Tech talk "Visual Recognition beyond Appearance, and its Robotic Applications ", at NLP Seminar at UCSB; Feb, 2021.
- 13 Tech talk "Visual Recognition beyond Appearance, and its Robotic Applications ", at NLP Seminar at University of Southern California, Information Sciences Institute; Jan, 2021.
- 14 Tech talk "Visual Recognition beyond Appearance, and its Robotic Applications ", at ML/big data Seminar at UCLA; Jan, 2021.
- 15 Tech talk "Visual Recognition beyond Appearance, and its Robotic Applications ", at ML/AI Seminar at University of California Irvine; Jan, 2021.
- 16 Tech talk "Visual Recognition beyond Appearance, and its Robotic Applications ", at Robotics Special Seminar at University of Maryland College Park; Dec, 2020.
- 17 Tech Talk "Towards Robust and Socially-Adept Autonomous Vehicles and Vehicle Trajectory Sensing using Existing Monocular Traffic Cameras for Safety Assessment" at the WORKSHOP ON AUTOMATED VEHICLE SAFETY: VERIFICATION, VALIDATION AND TRANSPARENCY collocated with IEEE ITSC Sep, 2020;
- 18 Tech Talk "Vehicle Trajectory Sensing using Existing Monocular Traffic Cameras for Safety Assessment" at the Automated Vehicles Symposium (AVS) breakout session on Safety Assurance of Automated Driving, July, 2020;
- 19 Tech Talk "Visual Recognition with Knowledge: from an Active Agent's Perspective", at the 2019 Telluride Neuromorphic Engineering workshop, Telluride, CO, July 2019;
- 20 Tutorial Talk "Machine Common Sense: from Developmental Psychology's perspective", at the 2019 Telluride Neuromorphic Engineering workshop, Telluride, CO, July 2019;
- 21 Tech Talk "Visual Recognition with Knowledge: from an Active Agent's Perspective", at the GigaVision workshop collocated with CVPR 2019, Los Angeles, CA, June 2019;

- 22 Tech Talk “Active Perception Beyond Appearance, and its Robotic Applications”, at the ARL workshop, Austin, Texas, Jan 2019;
- 23 Tech talk “Recognition Beyond Appearance, and its Robotic Applications” 3rd Workshop on Semantic Policy and Action Representations for Autonomous Robots (SPAR) October 05, 2018 - Madrid, Spain at IROS 2018
- 24 Tech talk “HUMAN-ROBOT INTERACTION AND RECOGNITION: GOING BEYOND APPEARANCE AND ROBOTIC APPLICATIONS”, RoboBusiness Conference, Sep. 26th - San Jose 2018.
- 25 Mini-course “Deep Learning Demystified” at the NSF TRIPODS summer symposium, Tuscon, AZ, May 2018;
- 26 Tech talk “Vision-Language integration challenges and needs in Robotics” at the 3rd integrating Vision and Language training school, Sep 5th, Athens, Greece.
- 27 Tech talk “Active Perception Beyond Appearance, and its Robotic Applications” at the Brain team, Google Inc, June 2017;
- 28 [Human Manipulation Action Understanding for Cognitive Robots](#), at Carnegie Mellon University VASC seminar, May 2016;
- 29 Visual Interpretation of Manipulation Actions part II, at Mid-Atlantic Computer Vision (MACV) Workshop 2016, John Hopkins University, April 2016;
- 30 Human Manipulation Action Understanding for Cognitive Robots, at Princeton Computer Vision Seminar, Feb 2016;
- 31 Grasping type, Action Intention, and Manipulation Semantics, at Institute of Cyber-systems and Control, Zhejiang University, August 2015;
- 32 Visual Interpretation of Manipulation Actions part I, at Mid-Atlantic Computer Vision (MACV) Workshop 2014, Virginia Tech University, April 18th 2014;
- 33 Plenary Socratic Dialogue, the Manipulation Action Language, together with Prof. Yiannis Aloimonos at Humanoids 2013, Oct 17th 2013;

#### Invited Presentations - ASU Internal

- 1 How to crack academic interviews. PostDoc Best Practice faculty talk, at Arizona State University, Nov. 2016;
- 2 Visual Interpretation of Manipulation Actions for Cognitive Robots PostDoc Best Practice faculty research talk, at Arizona State University, Sep. 2016;
- 3 Visual Interpretation of Manipulation Actions for Cognitive Robots at GPUs for Deep Learning and Embedded Technologies Workshop at Arizona State University, June 2016;

### PROFESSIONAL ACTIVITY and SERVICE

#### Editor, Associate Editor for peer-reviewed journals

- 1 Associate Editor [IEEE Robotics and Automation Letters](#) [2019 Impact factor: 3.6]
- 2 [Algorithms and Technologies towards Robotic Food Manipulation](#). Co-editor, Frontiers journal Special Research Topic.

- 3 [Special Issue on Semantic Policy and Action Representations for Autonomous Robots, special issue of Robotics and Autonomous Systems](#). Karinne Ramirez-Amaro, Yezhou Yang, Neil T. Dantam, Eren Erdal Aksoy and Gordon Cheng. Editor-in-Chief: Gaurav Sukhatme. Anticipated publication: Nov. 2018. [2017 Impact factor: 2.638]
- 4 *Fine-grained Visual Understanding and Reasoning*, special issue of Neurocomputing (Elsevier). Jun Yu, Yezhou Yang, Fionn Murtagh, Xinbo Gao. exp. Anticipated publication: Jul. 2019. [2017 Impact factor: 3.241]

International National Conference Committees

**Conference Area Chair/Senior Program Committee:** AAAI 2020-2023, ICLR 2023;

**Conference Associate Editor:** ICRA 2018-2023;

**Conferences Technical Program Committee or Reviewer:** ICML 2019, CVPR 2019-2022, ECCV 2020, ICCV 2019 and 2021, AAAI 2017, 2018, IJCAI 2016,2017, ICRA 2015,2016,2017,2018,2019, Humanoids 2014,2015,2016,2017, IROS 2014,2015,2016,2017,2018,2019, ICME 2013,2014,2015,2016.

International National Seminars and Conference Sessions Organized and/or Chaired

Workshop on "Learning, Perception, and Abstraction for Long-Horizon Planning", collocated with CoRL 2022;

Tutorial on "SERUM: Semantic Data Engineering for Robustness Under Multimodal Settings", collocated with WACV 2023;

Workshop on "O-DRUM:Open-Domain Retrieval Under Multi-Modal Settings", collocated with CVPR 2022;

Workshop on "Knowledge Injection in Neural Networks (KINN)", collocated with CIKM 2021;

Workshop on Deep Learning for Autonomous Robots, collocated with RSS 2016;

The First, Second and Third Workshop on Semantic Policy and Action Representations for Autonomous Robots, collocated with IROS 2015, IROS 2017 and IROS 2018;

First Workshop on Induce and Deduce: Integrating learning of representations and models with deductive, explainable reasoning that leverages knowledge, collocated with KR 2018.

Peer Reviewer for Journals

**Journal Reviewers:** International Journal of Computer Vision (IJCV), Computer Vision and Image Understanding (CVIU), IEEE Transactions on Robotics (T-RO), The Visual Computer, Information Sciences, Neurocomputing, Image and Vision Computing, Journal of Visual Communication and Image Representation, Cognitive Computation, Journal of Sensors, etc.

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Pear Reviewer Service for Funding Agencies

- 1 Panelist, National Science Foundation, May 2017, March 2019, March 2020, May 2020, Feb 2021, April 2021.
- 2 External Reviewer, U.S. Army Research Office, May 2020.
- 3 External Reviewer, the Czech Science Foundation, Aug 2019.

University-level Committees

- 1 University Senate Aug 2022 - now;

Engineering School-level Committees

- 1 Fulton Engineering School Robotics and Autonomous Systems (RAS) graduate program committee. Sep 2018 - now;

Unit-level Committees

- 1 School of Computing and AI, faculty search committee chair - 2022 (Urban and Social Computing); 2021 (Secure AI and AI for Social Good).
- 2 School of Computing, Informatics and Decision Systems Engineering, Computer Science undergraduate program committee. Aug 2017 - Aug 2019;
- 3 School of Computing, Informatics and Decision Systems Engineering, Computer Science graduate program admission committee. Aug 2016 - Aug 2017; Aug 2018 - Aug 2019;
- 4 School of Computing, Informatics and Decision Systems Engineering, AI track faculty search committee, Member 2021; AI for Security new faculty search committee, Member 2020; AI and NLP new faculty search committee, Member 2018; NLP new faculty search committee, Member 2017; Deep learning new faculty search committee, Member 2017; AI new faculty search committee, Member 2016.

Last updated: January 7, 2023