Junjie Ye

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300 N Beaudry Ave, CA90012, USA

EDUCATION

University of Southern California   Los Angeles, USA
PhD Student in Computer Science   *2023/08 - Present*
- Advisor: *Prof. Yue Wang*
- Capital One Fellowship 2025
- Qualcomm Innovation Fellowship 2024
- Viterbi School of Engineering Fellowship 2023

ETH Zürich   Zürich, Switzerland (Remotely)
Robotics Summer School Fellow   *2022/04 - 2022/08*
- ETH Robotics Student Fellowship 2022
- Internship: CVG Group

Tongji University   Shanghai, China
MSc in Mechanical Engineering   *2020/09 - 2023/03*
- Advisor: *Prof. Changhong Fu*
- **Academic Pioneers** in Tongji (**10**/**18,584** graduate students)
- Seized the **National Scholarship for Graduate Students** (top **0.8%**)

Tongji University   Shanghai, China
BEng in Mechanical Engineering   *2016/09 - 2020/07*
- Seized the **National Scholarship** (top **0.8%**)
- Granted the honor of **Excellent Graduate Student** in Shanghai (top **2%**)

WORKING EXPERIENCES

Toyota Research Institute   Los Altos, USA
Research Intern at the Large Behavior Model team   *2025/05 - Present*
- Supervisor: *Dr. Vitor Guizilini*
- Developed AnchorDream, an embodiment-aware video generative model for robot data synthesis; Paper accepted to ICRA2026.
- Developed RoboDream, controllable and scalable robot data synthesis via embodiment-aware world models; Paper in submission.

Bosch Center for Artificial Intelligence   Sunnyvale, USA
Research Intern   *2024/05 - 2024/08*
- Supervisor: *Dr. David Paz* and *Dr. Liu Ren*
- Conducted research on scalable map priors for online mapping; Paper accepted to ICRA2025.

RESEARCH INTERESTS

Robotics, Foundation Models, Computer Vision, Autonomous Driving

PREPRINTS

[p2] **Junjie Ye**, Rong Xue, Basile Van Hoorick, Runhao Li, Harshitha Belagavi Rajaprakash, Pavel Tokmakov, Muhammad Zubair Irshad, Vitor Guizilini, and Yue Wang. "RoboDream: Controllable and Scalable Robot Data Synthesis via Embodiment-Aware World Models," *Under review, 2026*. [project]

[p1] Hongyang Du*, **Junjie Ye***, Xiaoyan Cong*, Runhao Li, Jingcheng Ni, Aman Agarwal, Zeqi Zhou, Zekun Li, Randall Balestriero, and Yue Wang. "Distilling Geometry Priors for 3D-Consistent Video Generation," *Under review, 2026*. [paper] [project] (* indicates equal contribution.)

CONFERENCE PAPERS

[c22] **Junjie Ye**, Rong Xue, Basile Van Hoorick, Pavel Tokmakov, Muhammad Zubair Irshad, Yue Wang, and Vitor Guizilini. "AnchorDream: Repurposing Video Diffusion for Embodiment-Aware Robot Data Synthesis," in *ICRA, 2026*. [paper][project]

[c21] Jiageng Mao, Siheng Zhao, Siqi Song, Chuye Hong, Tianheng Shi, **Junjie Ye**, Mingtong Zhang, Haoran Geng, Jitendra Malik, Vitor Guizilini, and Yue Wang. "Universal Humanoid Robot Pose Learning from Internet Human Videos," in ***Humanoids***, *2025*. [paper][project]

[c20] **Junjie Ye**, David Paz, Hengyuan Zhang, Yuliang Guo, Xinyu Huang, Henrik I. Christensen, Yue Wang, and Liu Ren. "SMART: Advancing Scalable Map Priors for Driving Topology Reasoning," in ***ICRA***, *2025*. [paper][project]

[c19] Yuxuan Kuang*, **Junjie Ye***, Haoran Geng*, Jiageng Mao, Congyue Deng, Leonidas Guibas, He Wang, and Yue Wang. "RAM: Retrieval-Based Affordance Transfer for Generalizable Zero-Shot Robotic Manipulation" in ***CoRL***, *2024*. [paper][code][project] (* indicates equal contribution. ***Oral Presentation***)

[c18] Jiageng Mao*, **Junjie Ye***, Yuxi Qian, Marco Pavone, and Yue Wang. "A Language Agent for Autonomous Driving" in ***COLM***, *2024*. [paper][project] (* indicates equal contribution. ***Top 1% review scores***)

[c17] Jiageng Mao, Yuxi Qian, **Junjie Ye**, Hang Zhao, and Yue Wang. "GPT-Driver: Learning to Drive with GPT." *in NeurIPS 2023 Foundation Models for Decision Making Workshop*. [paper][project]

[c16] Shan An, Guangfu Che, Jinghao Guo, Yanjie Xu, Guoxin Wang, Konstantinos A Tsintotas, Fukai Zhang, **Junjie Ye**, Changhong Fu, Haogang Zhu, and Hong Zhang. "An Open-Source Robotic Chinese Chess Player" in ***IROS***, 2023. [paper]

[c15] Bowen Li, Ziyuan Huang, **Junjie Ye**, Yiming Li, Sebastian Scherer, Hang Zhao, and Changhong Fu. "PVT++: A Simple End-to-End Latency-Aware Visual Tracking Framework" in ***ICCV***, 2023. [paper][code][project]

[c14] Liangliang Yao, Changhong Fu, Sihang Li, Guangze Zheng, **Junjie Ye**. "SGDViT: Saliency-Guided Dynamic Vision Transformer for UAV Tracking" in ***ICRA***, 2023. [paper] [code]

[c13] **Junjie Ye**, Changhong Fu, Guangze Zheng, Danda Pani Paudel, and Guang Chen. "Unsupervised Domain Adaptation for Nighttime Aerial Tracking" in ***CVPR***, 2022. [paper] [code][benchmark][demo]

[c12] Guangze Zheng, Changhong Fu, **Junjie Ye**, Bowen Li, Geng Lu, and Jia Pan. "Siamese Object Tracking for Vision-Based UAM Approaching with Pairwise Scale-Channel Attention" in ***IROS***, 2022. [code]

[c11] Changhong Fu, Haolin Dong, **Junjie Ye**, Guangze Zheng, Sihang Li, Jilin Zhao. "HighlightNet: Highlighting Low-Light Potential Features for Real-Time UAV Tracking" in ***IROS***, 2022. [paper] [code]

[c10] Changhong Fu, Weiyu Peng, Sihang Li, **Junjie Ye**, Ziang Cao. "Local Perception-Aware Transformer for Aerial Tracking" in ***IROS***, 2022. [paper] [code]

[c9] Haobo Zuo, Changhong Fu, Sihang Li, **Junjie Ye**, Guangze Zheng. "End-to-End Feature Decontaminated Network for UAV Tracking" in ***IROS***, 2022. [code]

[c8] Changhong Fu, Sihang Li, Xinnan Yuan, **Junjie Ye**, Ziang Cao, and Fangqiang Ding. "Ad2Attack: Adaptive Adversarial Attack on Real-Time UAV Tracking" in ***ICRA***, 2022. [paper] [code]

[c7] Ziang Cao, Changhong Fu, **Junjie Ye**, Bowen Li, and Yiming Li. "HiFT: Hierarchical Feature Transformer for Aerial Tracking" in ***ICCV***, 2021. [paper] [code]

[c6] Shan An, Guangfu Che, Jinghao Guo, Haogang Zhu, **Junjie Ye**, Fangru Zhou, Zhaoqi Zhu, Dong Wei, Aishan Liu, Wei Zhang. "ARShoe: Real-Time Augmented Reality Shoe Try-on System on Smartphones" in ***ACM MM***, 2021. [paper]

[c5] **Junjie Ye**, Changhong Fu, Guangze Zheng, Ziang Cao, and Bowen Li. "DarkLighter: Light Up the Darkness for UAV Tracking" in ***IROS***, 2021. [paper] [code] [talk]

[c4] Ziang Cao, Changhong Fu, **Junjie Ye**, Bowen Li, and Yiming Li. "SiamAPN++: Siamese Attentional Aggregation Network for Real-Time UAV Tracking" in ***IROS***, 2021. [paper] [code]

[c3] Guangze Zheng, Changhong Fu, **Junjie Ye**, Fuling Lin, and Fangqiang Ding. "Mutation Sensitive Correlation Filter for Real-Time UAV Tracking with Adaptive Hybrid Label" in ***ICRA***, 2021. [paper] [code]

[c2] Changhong Fu, Ziang Cao, Yiming Li, **Junjie Ye**, and Chen Feng. "Siamese Anchor Proposal Network for High-Speed Aerial Tracking" in ***ICRA***, 2021. [paper] [code]

[c1] Bowen Li, Changhong Fu, Fangqiang Ding, **Junjie Ye**, and Fuling Lin. "ADTrack: Target-Aware Dual Filter Learning for Real-Time Anti-Dark UAV Tracking" in ***ICRA***, 2021. [paper] [code]

JOURNAL PAPERS

[j10] Changhong Fu, Kunhan Lu, Guangze Zheng, **Junjie Ye**, Ziang Cao, Bowen Li, and Geng Lu. "Siamese Object Tracking for Unmanned Aerial Vehicle: A Review and Comprehensive Analysis". *Artificial Intelligence Review (**AIR**), 2023.*[paper] [code]

[j9] Changhong Fu, Teng Li, **Junjie Ye**, Guangze Zheng, Sihang Li, and Peng Lu. "Scale-Aware Domain Adaptation for Robust UAV Tracking". *IEEE Robotics and Automation Letters (**RAL**), 2023.*[paper] [code]

[j8] Guangze Zheng, Changhong Fu, **Junjie Ye**, Bowen Li, Geng Lu, and Jia Pan. "Scale-Aware Siamese Object Tracking for Vision-Based UAM Approaching". *IEEE Transactions on Industrial Informatics (**TII**), 2023.*[paper] [code]

[j7] **Junjie Ye**, Changhong Fu, Ziang Cao, Shan An, Guangze Zheng, and Bowen Li. "Tracker Meets Night: A Transformer Enhancer for UAV Tracking". *IEEE Robotics and Automation Letters (**RAL**) with **ICRA** presentation, 2022.*[paper] [code] [talk]

[j6] Shan An, Haogang Zhu, Jiaao Zhang, **Junjie Ye**, Siliang Wang, Jianqin Yin, and Hong Zhang. "Deep Tri-Training for Semi-Supervised Image Segmentation". *IEEE Robotics and Automation Letters (**RAL**) with **IROS** presentation, 2022.* (IF=4.6) [paper]

[j5] Haobo Zuo, Changhong Fu, Sihang Li, **Junjie Ye**, and Guangze Zheng. "DeconNet: End-to-End Decontaminated Network for Vision-Based Aerial Tracking". *IEEE Transactions on Geoscience and Remote Sensing (**TGRS**), 2022.* (IF=7.5) [code]

[j4] Bowen Li, Changhong Fu, Fangqiang Ding, **Junjie Ye**, and Fuling Lin. "All-Day Object Tracking for Unmanned Aerial Vehicle". *IEEE Transactions on Mobile Computing (**TMC**), 2022.* (IF=7.7) [paper] [code]

[j3] **Junjie Ye**, Changhong Fu, Fuling Lin, Fangqiang Ding, Shan An, and Geng Lu. "Multi-Regularized Correlation Filter for UAV Tracking and Self-Localization". *IEEE Transactions on Industrial Electronics (**TIE**), 2021.*[paper] [code]

[j2] Changhong Fu, Ziang Cao, Yiming Li, **Junjie Ye**, and Chen Feng. "Onboard Real-Time Aerial Tracking with Efficient Siamese Anchor Proposal Network". *IEEE Transactions on Geoscience and Remote Sensing (**TGRS**), 2021.*[paper] [code]

[j1] Changhong Fu, **Junjie Ye**, Juntao Xu, Yujie He, and Fuling Lin. "Disruptor-Aware Interval-Based Response Inconsistency for Correlation Filters in Real-Time Aerial Tracking". *IEEE Transactions on Geoscience and Remote Sensing (**TGRS**), 2020.*[paper] [code]

RESEARCH EXPERIENCE

PSI Lab, USC   Los Angeles, USA
PhD Researcher, Advisor: Prof. Yue Wang   2023/08 - Present
- Generalizable Robotic Manipulation
  - Generalizable zero-shot robotic manipulation by retrieving and transferring affordance from diverse heterogeneous data. (*First-authored* paper accepted by *CoRL 2024 as an oral presentation*).
- LLMs as an Agent
  - Exploit Large Language Models (LLMs) as a cognitive agent to integrate human-like intelligence into autonomous driving systems (*First-authored* paper accepted by *COLM 2024*).

CVG Group, ETH Zürich   Zürich, Switzerland (Remotely)
Robotics Student Fellow, Advisors: Dr. Daniel Barath and Prof. Marc Pollefeys   2022/04 - 2022/08
- Visual Localization
  - Proposed the hybrid RANSAC framework with hybrid correspondence learning for accurate camera pose estimation.

Computer Vision Lab, ETH Zürich   Zürich, Switzerland (Remotely)
Research Assistant, Advisor: Dr. Danda Pani Paudel   2021/10 - 2021/12
- Domain Adaptive Visual Tracking
  - Proposed an unsupervised domain adaptation framework to adapt object tracking from daytime to nighttime, along with a nighttime tracking benchmark (*First-authored* paper accepted by *CVPR 2022*).

AR Vision Learning Group, JD.COM Inc.   Beijing, China
Research Intern, mentor: Dr. Shan An   2021/07 - 2021/12
- Intelligent Perception on Embedded Systems
  - Proposed a real-time augmented reality shoe try-on system, namely ARShoe, on smartphones (The system is implemented in JD APP; paper accepted by *ACM MM2021*).

UAV Lab, Tsinghua University   Beijing, China
Research Assistant, Advisor: Prof. Geng Lu   2021/05 - 2021/06
- Visual Tracking for UAV Self-Localization
  – Proposed the response deviation-aware and channel reliability-aware regularizations for CF and constructed a visual tracking-based UAV self-localization system

Vision4Robotics Group, Tongji University   Shanghai, China
Research Student, Supervisor: Prof. Changhong Fu   2019/06 - 2023/03
- Nighttime Aerial Tracking
  – Constructed a spatial-channel transformer-based enhancer, which is trained in a tracking-related manner, to facilitate nighttime UAV tracking significantly (*First-authored* paper accepted by *RAL/ICRA2022*).
  – Designed a Retinex-inspired plug-and-play deep low-light enhancer to light up the darkness for UAV tracking (*First-authored* paper accepted by *IROS 2021*).
- Correlation Filter (CF)-Based UAV Tracking
  – Introduced the interval response inconsistency and the disruptor-aware mechanism into CF framework, realizing competitive performance (Paper accepted by *IEEE TGRS* as *first student author*).

SELECTED HONORS

Outstanding Reviewer for CVPR 2025	*Jun. 2025*
Capital One Fellowship 2025	*Oct. 2024*
Qualcomm Innovation Fellowship 2024	*Apr. 2024*
Outstanding Thesis of Chinese Institute of Electronics (top 43 among all graduates, national)	*Jan. 2024*
Viterbi School of Engineering Fellowship	*Sept. 2023*
Outstanding Thesis Award (top 2% students among all majors, provincial)	*Sept. 2023*
Excellent Graduate of Shanghai (top 2% students among all majors, provincial)	*Jun. 2023*
Academic Pioneers of Tongji (top **10** among all **18584** graduate students)	*Nov. 2022*
National Scholarship for Graduate (top 0.8% students among all majors, national)	*Oct. 2022*
ETH Robotics Student Fellowship 2022	*Mar. 2022*
Outstanding Master Student Scholarship (top 1%, departmental)	*Dec. 2021*
Outstanding Graduate Student of Tongji (top 1%, departmental)	*Dec. 2021*
Excellent Graduate of Shanghai (top 2% students among all majors, provincial)	*Jun. 2020*
National Scholarship (top 0.8% students among all majors, national)	*Dec. 2019*

SERVICES

Reviewer for CVPR ('22, '23, '24, '25), ECCV ('22, '24), ICCV ('23), NeurIPS ('23, '24), ICLR ('24), ICML ('24), IROS ('21, '22, '23, '24), ICRA ('23, '24, '25), ICML ('24), IEEE T-NNLS, and IEEE RA-L, IEEE Systems Journal, Information Fusion, ISPRS P&RS, Knowledge-Based Systems, etc.
Total Reviews: >80

SKILLS

Programming	Python, Matlab
Languages	Chinese (native), English (TOEFL: 106, 29R, 29L, 22S, 26W)
Libraries	PyTorch, OpenCV