YUXIN CHEN

PhD · Control · Robotics · Machine Learning

2521 Hearst Ave, Berkeley, CA, 94709

+1 (734) 881-4119 | yuxinc@berkeley.edu | thomaschen98 | https://thomaschen98.github.io

Summary

I build safe and agile embodied agents that intelligently perceive, interact with, and collaborate within the physical world while adhering to human values. My research emphasizes whole-body control of mobile robots, dexterous manipulation, and human-robot interaction, leveraging state-of-the-art advancements in reinforcement learning, generative models, optimization, and control.

Education

University of California, Berkeley — *Berkeley, CA*
PH.D. MECHANICAL ENGINEERING (CONTROL) — *Aug 2022 – May 2027*
- Advisor: Prof. Masayoshi Tomizuka
- Minors: Machine Learning, Optimization

University of Michigan, Ann Arbor — *Ann Arbor, MI*
M.S. ROBOTICS — *Aug 2020 – May 2022*
- Advisor: Prof. Ram Vasudevan

University of Michigan, Ann Arbor — *Ann Arbor, MI*
B.S.E. AEROSPACE ENGINEERING (SUMMA CUM LAUDE) — *Sep 2018 – May 2020*
- Minor: Computer Science

Shanghai Jiao Tong University — *Shanghai, China*
B.S. MECHANICAL ENGINEERING — *Sep 2016 – Aug 2020*

Research Experience

University of California, Berkeley — *Berkeley, CA*
GRADUATE STUDENT RESEARCHER — *Aug 2022 – Present*
Faculty member: Prof. Masayoshi Tomizuka
Affiliation: Mechanical Systems Control (MSC) Laboratory & Berkeley AI Research (BAIR) & Center for Humanoid Intelligence (HIC)

University of Michigan, Ann Arbor — *Ann Arbor, MI*
GRADUATE STUDENT RESEARCHER — *May 2020 – Jul 2022*
Faculty member: Prof. Ram Vasudevan
Affiliation: Robotics and Optimization for the Analysis of Human Motion (ROAHM) Laboratory

University of Michigan, Ann Arbor — *Ann Arbor, MI*
UNDERGRADUATE RESEARCH ASSISTANT — *Oct 2018 – May 2020*
Faculty member: Prof. Ella Atkins & Prof. Brent Gillespie
Affiliation: Autonomous Aerospace Systems (A2SYS) Laboratory & HAPTIX Laboratory

Working Experience

Nvidia, Corp. — *Santa Clara, CA*
RESEARCH INTERN. (MENTOR: MARCO PAVONE & BORIS IVANOVIC) — *Mar 2026 – Sep 2026*

Robotics and AI Institute — *Cambridge, MA*
RESEARCH INTERN. (MENTOR: JIUGUANG WANG) — *Mar 2025 – Aug 2025*

Mitsubishi Electric Research Laboratories — *Cambridge, MA*
RESEARCH INTERN. (MENTOR: DEVESH JHA & DIEGO ROMERES) — *May 2024 – Aug 2024*

Zoox, Inc. — *Foster City, CA*
SOFTWARE ENGINEERING INTERN. (MENTOR: RICK ZHANG) — *May 2021 – Aug 2021*

Honda R&D Americas, LLC — *Ann Arbor, MI*
STUDENT MEMBER, MULTIDISCIPLINARY DESIGN PROGRAM (MENTOR: TYLER NAES) — *Jan 2021 – Dec 2021*

ZF (China) Investment Co., Ltd — *Shanghai, China*
SOFTWARE DEVELOPMENT & TESTING INTERN. (MENTOR: YI ZHANG) — *Jan 2018 – Mar 2018*

PUBLICATIONS

*(The superscript * indicates equal contribution.)*

Journal

[J4] K. Fang*, **Y. Chen***, X. Zhu*, F. Niroui, L. Sun, J. Wang, "SAGA: Open-World Mobile Manipulation via Structured Affordance Grounding," *IEEE Robotics and Automation Letters (RA-L)*, 2026.

[J3] S. Zhao*, X. Zhu*, **Y. Chen**, C. Li, X. Zhang, M. Ding, M. Tomizuka, "DexH2R: Task-oriented Dexterous Manipulation from Human to Robots," *IEEE/ASME Transactions on Mechatronics (T-MECH)*, 2025.

[J2] R. Jalayer, **Y. Chen**, M. Jalayer, C. Orsenigo, M. Tomizuka, "Testing Human-Hand Segmentation on In-Distribution and Out-of-Distribution Data in Human-Robot Interactions Using a Deep Ensemble Model," *Mechatronics*, vol. 110, pp. 103365, 2025.

[J1] P. Ewen, A. Li, **Y. Chen**, S. Hong and R. Vasudevan, "These Maps are Made for Walking: Real-Time Terrain Property Estimation for Mobile Robots," *IEEE Robotics and Automation Letters (RA-L)*, vol. 7, no. 4, pp. 7083-7090, 2022.

Conference Proceedings

[C13] F. Zhang, P. Wang, C. Li, Y. Li, **Y. Chen**, L. Feng, C. Xu, M. Tomizuka, B. An, "REAR: Test-time Preference Realignment through Reward Decomposition," *Forty-Third International Conference on Machine Learning (ICML)*, 2025. (acceptance rate: 26.6%)

[C12] **Y. Chen***, J. Wei*, C. Xu, B. Li, M. Tomizuka, A. Bajcsy, R. Tian, "Reimagination with Test-time Observation Interventions: Distractor-Robust World Model Predictions for Visual Model Predictive Control," *2026 IEEE International Conference on Robotics and Automation (ICRA)*, 2026. (acceptance rate: 38.0%)

[C11] S. Zhao, K. Yang, **Y. Chen**, C. Li, Y. Xie, X. Zhang, C. Wang, M. Tomizuka, "DexCtrl: Towards Sim-to-Real Dexterity with Adaptive Controller Learning," *2026 IEEE International Conference on Robotics and Automation (ICRA)*, 2026. (acceptance rate: 38.0%)

[C10] G. Zhan, L. Tao, P. Wang, Y. Wang, Y. Li, **Y. Chen**, M. Tomizuka, S. Li, "Mean Flow Policy with Instantaneous Velocity Constraints for One-step Action Generation," *The Fourteenth International Conference on Learning Representations (ICLR)*, 2026. (acceptance rate: 28.2%, **Oral: 1.18%**)

[C9] X. Zhu*, **Y. Chen***, L. Sun*, F. Niroui, S. Le Cleac'h, J. Wang, K. Fang, "Versatile Loco-Manipulation through Flexible Interlimb Coordination," *2025 Conference on Robot Learning (CoRL)*, 2025. (acceptance rate: 35.8%, **Oral: 5.69%**)

[C8] **Y. Chen***, C. Tang*, J. Wei, C. Li, R. Tian, X. Zhang, W. Zhan, P. Stone, M. Tomizuka, "MEReQ: Max-Ent Residual-Q Inverse RL for Sample-Efficient Alignment from intervention," *2025 Conference on Robot Learning (CoRL)*, 2025. (acceptance rate: 35.8%)

[C7] **Y. Chen**, D. Jha, M. Tomizuka, D. Romeres, "FDPP: Fine-tune Diffusion Policy with Human Preference," *2025 IEEE International Conference on Robotics and Automation (ICRA)*, 2025. (acceptance rate: 38.7%)

[C6] T. Zhang, Z. Wu, **Y. Chen**, Y. Wang, B. Liang, S. Moura, M. Tomizuka, M. Ding, W. Zhan, "Physics-Aware Robotic Palletization with Online Masking Inference," *2025 IEEE International Conference on Robotics and Automation (ICRA)*, 2025. (acceptance rate: 38.7%, **Best Paper Award in Automation: 10/4153**)

[C5] **Y. Chen***, Y. Xu*, J. Nie, Y. Wang, H. Zhuang, M. Okumura, "Advancing Cross-domain Discriminability in Continual Learning of Vision-Language Models," *Advances in Neural Information Processing Systems (NeurIPS)*, 2024. (acceptance rate: 25.8%)

[C4] **Y. Chen**, C. Tang, R. Tian, C. Li, J. Li, M. Tomizuka and W. Zhan, "Quantifying Interaction Level Between Agents Helps Cost-efficient Generalization in Multi-agent Reinforcement Learning," *Proceedings of the 1st Reinforcement Learning Conference (RLC)*, 2024. (acceptance rate: 40%)

[C3] **Y. Chen**, C. Tang, R. Tian, C. Li, J. Li, M. Tomizuka and W. Zhan, "Quantifying Agent Interaction in Multi-Agent Reinforcement Learning for Cost-efficient Generalization," *Proceedings of the 23rd International Conference on Autonomous Agents and Multiagent Systems (AAMAS)*, pp. 2201-2203, 2024. (Extended Abstract, acceptance rate: 45.1%)

[C2] P. Ewen, J.P. Sleiman, **Y. Chen**, W.C. Lu, M. Hutter and R. Vasudevan, "Generating Continuous Motion and Force Plans in Real-Time for Legged Mobile Manipulation," *2021 IEEE International Conference on Robotics and Automation (ICRA)*, pp. 4933-4939, 2021. (acceptance rate: 43.6%)

[C1] M. Romano, **Y. Chen**, O. Marshall, and E. Atkins, "Nailed it: Autonomous Roofing with a Nailgun-Equipped Octocopter," *AIAA Aviation 2021 Forum,* pp. 3211, 2021.

Workshop

[W4] X. Zhu*, **Y. Chen***, L. Sun*, F. Niroui, S. Le Cleac'h, J. Wang, K. Fang, "Versatile Loco-Manipulation through Flexible Interlimb Coordination," *RSS 2025 Workshop on Whole-body Control and Bimanual Manipulation: Applications in Humanoids and Beyond (WCBM)*, 2025.

[W3] **Y. Chen***, J. Wei*, C. Xu, B. Li, M. Tomizuka, A. Bajcsy, R. Tian, "Reimagination with Test-time Observation Interventions: Distractor-Robust World Model Predictions for Visual Model Predictive Control," *RSS 2025 Workshop on Out-of-Distribution Generalization in Robotics (OOD)*, 2025. (**Oral**, **Best Paper Finalist**)

[W2] **Y. Chen**, D. Jha, M. Tomizuka, D. Romeres, "Adapting Diffusion Policies to Human Preferences via Reward-Guided Fine-Tuning," *ICRA 2025 Workshop on Safely Leveraging Vision-Language Foundation Models in Robotics: Challenges and Opportunities (Safe-VLM),* 2025. (**Oral**)

[W1] P. Wang, X. Zhu, **Y. Chen**, C. Xu, M. Tomizuka, C. Li, "Residual Policy Gradient: A Reward View of KL-regularized Objective," *ICRA 2025 Workshop on Safely Leveraging Vision-Language Foundation Models in Robotics: Challenges and Opportunities (Safe-VLM),* 2025. (**Spotlight**)

Preprints and Working Papers

[P3] J. Cao*, **Y. Chen***, M. Tomizuka, "CLAW: Composable Language-annotated Whole-body Motion Generation," *under review*, 2025.

[P2] Z. Xu, J. Liu, **Y. Chen**, K. Keutzer, M. Tomizuka, C. Xu, C. Peng, "Rethinking Image-to-3D Generation with Sparse Queries: Efficiency, Capacity, and Input-View Bias," *under review*, 2025.

[P1] Z. Huang, Y. Li, C. Zhang, R. Zhang, G. Wang, **Y. Chen**, X. Liu, M. Tomizuka, X. Ji, "3DWay: Generalizing Robot Manipulation via 3D Consistent Waypoints," *under review*, 2025.

Awards and Scholarships

2026 **Qualcomm Innovation Fellowship Finalist**, *Qualcomm Incorporated*
2025 **Departmental Block Grant Fellowship**, *University of California, Berkeley*
2025 **ICRA 2025 Best Paper Award in Automation**, *IEEE Robotics and Automation Society*
2025 **Qualcomm Innovation Fellowship Finalist**, *Qualcomm Incorporated*
2020 **Outstanding Graduates of Shanghai (top 3%)**, *Ministry of Education of Shanghai*
2020 **Capstone Design Gold Award (top 1%)**, *Shanghai Jiao Tong University*
2020 **James B. Angell Scholar**, *University of Michigan*
2019 **Roger King Scholarship**, *University of Michigan*
2018 **Longey-SJTU Global Elite Scholarship**, *Shanghai Jiao Tong University*
2017 **Rongchang Science and Technology Innovation Scholarship**, *Shanghai Jiao Tong University*
2017 **Undergraduate Academic Excellence Scholarship**, *Shanghai Jiao Tong University*

Grants

2026 **Nvidia Academic Grant Program**, *Nvidia*
2025 **Google-BAIR Commons**, *Google DeepMind*

Teaching Experience

University of California, Berkeley *Berkeley, CA*
Advanced Control System I (MECENG 232) - Graduate Student Instructor *Fall 2024*
Instructor: Prof. Masayoshi Tomizuka
Advanced Control System II (MECENG 233) - Graduate Student Instructor *Spring 2024, Spring 2026*
Instructor: Prof. Masayoshi Tomizuka
AI for Autonomy (MECENG 292B) - Graduate Student Instructor *Spring 2024*
Instructor: Dr. Wei Zhan

University of Michigan, Ann Arbor *Ann Arbor, MI*
Self-Driving Cars: Perception and Control (ROB 535) - Graduate Student Instructor *Fall 2021*
Instructor: Prof. Ram Vasudevan
Motion Planning (EECS 598) - Course Assistant *Winter 2021*
Instructor: Prof. Dmitry Berenson
Introduction to Aerospace Systems (AERO 201) - Course Assistant *Fall 2019*
Instructor: Prof. Ella Atkins

Academic Services

Journal Reviewer

- IEEE Robotics and Automation Letters (RA-L) *2024 – Present*

Conference Reviewer

- International Conference on Learning Representations (ICLR) *2025 – 2026*
- International Conference on Machine Learning (ICML) *2025 – 2026*
- Robotics: Science and Systems (RSS) *2025 – 2026*

- Conference on Robot Learning (CoRL) *2025*
- IEEE International Conference on Robotics and Automation (ICRA) *2024 – 2026*
- IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS) *2023 – 2025*
- Reinforcement Learning Conference (RLC) *2025 – 2026*
- Conference on Computer Vision and Pattern Recognition (CVPR) *2026*
- European Conference on Computer Vision (ECCV) *2026*
- Learning for Dynamics & Control Conference (L4DC) *2025*

Program Committee

- Co-organizer of IAVVC workshop on Scenario and Behavior Diversity in Simulation for Autonomous Vehicle Validation *2023*
- Program Committee of ICRA workshop on Human-Centered Robot Learning in the Era of Big Data and Large Models *2025*
- Program Committee for the 40th AAAI Conference on Artificial Intelligence (AAAI-26) *2025*

Invited Talks

Advancing Cross-domain Discriminability in Continual Learning of Vision-Language Models

- TwelveLabs Webinar *Feb 2025*

Scaling Mobile Manipulation from Whole-body Coordination to Open-world Semantics

- Shenglanxueyuan Webinar *Dec 2025*
- Machine Vision and Intelligence Group at Shanghai Jiao Tong University *Jan 2026*
- Laboratory for Intelligent Decision and Autonomous Robots (LIDAR) at Georgia Institute of Technology *Feb 2026*

Mentorship

Yikuan Fang	Undergraduate Student (Now a Master's student at CMU)
Yiren Rong	Undergraduate Student (Now a Ph.D. student at Duke University)
Tianqi Zhang	Undergraduate Student (Now a Ph.D. student at Tsinghua University)
Jianglan Wei	Undergraduate Student (Now a Master's student at CMU)
Jingyuan Chen	Undergraduate Student (Now a Master's student at University of Pennsylvania)
Jianuo Cao	Undergraduate Student at Nanjing University
Hari Narayan Srikanth	Undergraduate Student at University of California, Berkeley
Nathan Alexander Jew	Undergraduate Student at University of California, Berkeley
Anqi Li	Undergraduate Student at Peking University
Zhaobo Li	Master's Student at University of California, Berkeley
Zhuo Cao	Undergraduate Student at Tsinghua University
Mengjie Zhao	Undergraduate Student at Tsinghua University
Menglin Wu	Undergraduate Student at Xi'an Jiaotong University