

YUXIN CHEN

PHD · CONTROL · ROBOTICS · MACHINE LEARNING

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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

PH.D. MECHANICAL ENGINEERING (CONTROL)

- Advisor: Prof. Masayoshi Tomizuka
- Minors: Machine Learning, Optimization

Berkeley, CA

Aug 2022 – May 2027

University of Michigan, Ann Arbor

M.S. ROBOTICS

- Advisor: Prof. Ram Vasudevan

Ann Arbor, MI

Sep 2020 – May 2022

University of Michigan, Ann Arbor

B.S.E. AEROSPACE ENGINEERING (SUMMA CUM LAUDE)

- Minor: Computer Science

Ann Arbor, MI

Sep 2018 – May 2020

Shanghai Jiao Tong University

B.S. MECHANICAL ENGINEERING

Shanghai, China

Sep 2016 – Aug 2020

RESEARCH EXPERIENCE

University of California, Berkeley

GRADUATE STUDENT RESEARCHER

Faculty member: Prof. Masayoshi Tomizuka

Affiliation: Mechanical Systems Control (MSC) Laboratory & Berkeley AI Research (BAIR) & Center for Humanoid Intelligence (HIC)

Berkeley, CA

Aug 2022 – Present

University of Michigan, Ann Arbor

GRADUATE STUDENT RESEARCHER

Faculty member: Prof. Ram Vasudevan

Affiliation: Robotics and Optimization for the Analysis of Human Motion (ROAHM) Laboratory

Ann Arbor, MI

May 2020 – Jul 2022

University of Michigan, Ann Arbor

UNDERGRADUATE RESEARCH ASSISTANT

Faculty member: Prof. Ella Atkins & Prof. Brent Gillespie

Affiliation: Autonomous Aerospace Systems (A2SYS) Laboratory & HAPTIX Laboratory

Ann Arbor, MI

Oct 2018 – May 2020

WORKING EXPERIENCE

Nvidia, Corp.

RESEARCH INTERN. (MENTOR: MARCO PAVONE & BORIS IVANOVIC)

Santa Clara, CA

Mar 2026 – Present

Robotics and AI Institute

RESEARCH INTERN. (MENTOR: JIUGUANG WANG)

Cambridge, MA

Mar 2025 – Aug 2025

Mitsubishi Electric Research Laboratories

RESEARCH INTERN. (MENTOR: DEVESH JHA & DIEGO ROMERES)

Cambridge, MA

May 2024 – Aug 2024

Zoxx, Inc.

SOFTWARE ENGINEERING INTERN. (MENTOR: RICK ZHANG)

Foster City, CA

May 2021 – Aug 2021

Honda R&D Americas, LLC

STUDENT MEMBER, MULTIDISCIPLINARY DESIGN PROGRAM (MENTOR: TYLER NAES)

Ann Arbor, MI

Jan 2021 – Dec 2021

ZF (China) Investment Co., Ltd

SOFTWARE DEVELOPMENT & TESTING INTERN. (MENTOR: YI ZHANG)

Shanghai, China

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*, 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)*, 2022.

Conference Proceedings

- [C14] Z. Huang, Y. Li, C. Zhang, R. Zhang, **Y. Chen**, G. Wang, X. Liu, M. Tomizuka, X. Ji, "3DWay: Generalizing Robot Manipulation via 3D Consistent Waypoints," *The 19th European Conference on Computer Vision (ECCV)*, 2026. (acceptance rate: 27.5%)
- [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)*, 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)*, 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 Forum*, 2021.

Workshop

- [W10] A. Li*, **Y. Chen***, Z. Li*, Z. Cao*, J. Ren, M. Tomizuka, D. Shah, "TANGO: Humanoid Navigation in Cluttered Environments with a Whole-Body Vision-Language-Action Model," *RSS 2026 Workshop on Whole-body Control and Bimanual Manipulation: Applications in Humanoids and Beyond (WCBM)*, 2026. (**Oral**)

- [W9] M. Zhao*, **Y. Chen***, S. Zhu, Y. Hong, Y. Wang, Y. Liu, X. Tian, B. Ye, B. Jia, H. Zhao, S. Huang, M. Tomizuka, "Can We Tune Humanoid Behavior Foundation Models for Dynamic and Contact-Rich Tasks?" *RSS 2026 Workshop on Whole-body Control and Bimanual Manipulation: Applications in Humanoids and Beyond (WCBM)*, 2026.
- [W8] J. Cao*, **Y. Chen***, Y. Song, M. Tomizuka, C. Li, R. Tian, "TEXEDO: Test Time Scaling for Controller-Aware Language-Conditioned Humanoid Motion Generation," *RSS 2026 Workshop on Whole-body Control and Bimanual Manipulation: Applications in Humanoids and Beyond (WCBM)*, 2026.
- [W7] J. Cao*, **Y. Chen***, Y. Song, M. Tomizuka, C. Li, R. Tian, "TEXEDO: Test Time Scaling for Controller-Aware Language-Conditioned Humanoid Motion Generation," *RSS 2026 Workshop on Data-Centric Robotics: What Data Do Robots Really Need? (RoboData)*, 2026.
- [W6] M. Zhao*, **Y. Chen***, S. Zhu, Y. Hong, Y. Wang, Y. Liu, X. Tian, B. Ye, B. Jia, H. Zhao, S. Huang, M. Tomizuka, "Can We Tune Humanoid Behavior Foundation Models for Dynamic and Contact-Rich Tasks?" *RSS 2026 Workshop Towards Robust Execution of Long-Horizon Whole-Body Control Task (ExWBC)*, 2026. **(Oral)**
- [W5] A. Li*, **Y. Chen***, Z. Li*, Z. Cao*, J. Ren, M. Tomizuka, D. Shah, "TANGO: Humanoid Navigation in Cluttered Environments with a Whole-Body Vision-Language-Action Model," *RSS 2026 Workshop Towards Robust Execution of Long-Horizon Whole-Body Control Task (ExWBC)*, 2026.
- [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

- [P5] **Y. Chen**, H. Srikanth, N. Jew, M. Wu, P. Wang, J. Ren, M. Tomizuka, P. Xu, J. Xie, R. Tian, "CLIFT: Turning Gemini Robotics On-Device into Humanoid Specialists via Non-Invasive Closed-Loop Iterative Fine-Tuning," *under review*, 2026.
- [P4] A. Li*, **Y. Chen***, Z. Li, Z. Cao, J. Ren, M. Tomizuka, D. Shah, "Humanoid Navigation in Cluttered Environments with a Whole-Body Vision-Language-Action Model," *under review*, 2026.
- [P3] J. Cao*, **Y. Chen***, Y. Song, M. Tomizuka, C. Li, R. Tian, "TEXEDO: Test Time Scaling for Controller-Aware Language-Conditioned Humanoid Motion Generation," *under review*, 2026.
- [P2] J. Cao*, **Y. Chen***, M. Tomizuka, "CLAW: Composable Language-annotated Whole-body Motion Generation," *under review*, 2026.
- [P1] 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.

AWARDS AND SCHOLARSHIPS

-
- 2026 **Third Place in Logistic Picking (First Place in the U.S.)**, *ICRA 2026 What Bimanuals Can Do (WBCD) Competition*
 - 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*

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)
- International Conference on Machine Learning (ICML)
- Robotics: Science and Systems (RSS)
- Conference on Robot Learning (CoRL)
- IEEE International Conference on Robotics and Automation (ICRA)
- IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)
- Reinforcement Learning Conference (RLC)
- Conference on Computer Vision and Pattern Recognition (CVPR)
- European Conference on Computer Vision (ECCV)
- Learning for Dynamics & Control Conference (L4DC)

*2025 – 2026**2025 – 2026**2025 – 2026**2025**2024 – 2026**2023 – 2025**2025 – 2026**2026**2026**2025***Program Committee**

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

*2023**2025**2025 – 2026*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
- Machine Vision and Intelligence Group at Shanghai Jiao Tong University
- Laboratory for Intelligent Decision and Autonomous Robots (LIDAR) at Georgia Institute of Technology

*Dec 2025**Jan 2026**Feb 2026***Bridging High-level Reasoning and Low-level Control for Loco-manipulation and Dexterity**

- BAIR Humnaoid Intelligence Center Rototics Workshop

*Apr 2026***TANGO: Humanoid Navigation in Cluttered Environments with a Whole-Body Vision-Language-Action Model**

- Princeton Robotic Intelligence and Systems Lab (PRISM) at Princeton University

*Jun 2026***Toward Deployable Humanoid FMs: Whole-Body Navigation, Motion Generation, and Closed-Loop Adaptation**

- Stealth Company

Jul 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
Jiakang Chen	Undergraduate Student at Tsinghua University
Shangbo Luan	Undergraduate Student at Peking University
Kaixiang Yao	Undergraduate Student at The Southern University of Science and Technology
Yujia Zeng	Undergraduate Student at The University of Science and Technology of China
Yuzhen Song	Undergraduate Student at The Southern University of Science and Technology