William Xie

william.xie@colorado.edu williamxie.nyc user=7wvldK4AAAAJ 0009-0005-8430-5817

Education

2028 (Exp.) **Ph.D.** in Computer Science from University of Colorado Boulder; GPA: 4.0
Advisor: Nikolaus Correll

2026 **MS** in Computer Science from University of Colorado Boulder; GPA: 4.0

2022 **BS** in Computer Science from Columbia University; GPA: 3.7
Advisor: Brian Plancher

Publications

Refereed Conference Papers

C1 **Xie**, **William**, Maria Valentini, Jensen Lavering and Nikolaus Correll, "DeliGrasp: Inferring Object Properties with LLMs for Adaptive Grasp Policies"In: *Conference on Robot Learning*, June 2024.

Refereed Workshop Papers

W1 **Xie**, **William**, Max Conway, Yutong Zhang and Nikolaus Correll, "Unfettered Forceful Skill Acquisition with Physical Reasoning and Coordinate Frame Labeling"In: *R3 Workshop at Robotics: Science and Systems*, June 2025.

W2 **Xie**, **William**, Enora Rice and Nikolaus Correll, "On the Dual-Use Dilemma in Physical Reasoning and Force"In: *Reliable Robotics Workshop at Robotics: Science and Systems*, June 2025.

W3 **Xie**, **William**, Stefan Caldararu and Nikolaus Correll, "Just Add Force for Delicate Robot Policies"In: *MRM-D Workshop at Conference on Robot Learning*, Sept. 2024.

W4 **Xie**, **William**, Jensen Lavering and Nikolaus Correll, "DeliGrasp: Inferring Object Mass, Friction, and Compliance with LLMs for Adaptive Grasp Policies"In: *VLMNM Workshop at International Conference on Robotics and Automation*, Mar. 2024.

W5 **Xie**, **William** and Brian Plancher, "Can Large Language Models Reduce the Barriers to Entry for High School Robotics?"In: *R4L Workshop at International Symposium on Robot and Human Interactive Communication*, Aug. 2023.

Preprints

P1 Tan, Xuan, **William Xie** and Nikolaus Correll, "Characterization, Analytical Planning, and Hybrid Force Control for the Inspire RH56DFX Hand"In: *submission, equal contribution*, Mar. 2026.

P2 Pudasaini, Niraj, Carson Kohlbrenner, **William Xie**, Alessandro Roncone and Nikolaus Correll, "Whole-Body Dynamic Obstacle Avoidance with Humanoid Skin"In: *preparation for submission*, Dec. 2025.

P3 **Xie**, **William** and Nikolaus Correll, "Towards Forceful Robotic Foundation Models: a Literature Survey"In: *arXiv:2504.11827*, Mar. 2025.

Awards and Recognitions

2025 NSF ACCESS Explore Compute Allocation (**2000 hrs**), National Science Foundation
2024 Bell Foundation Research Fellowship (**$2000**), University of Colorado Boulder
2024 Conference Support Fellowship (**$2000**), University of Colorado Boulder
2024 Graduate Research Fellowship (**$111000**), National Science Foundation
2020 COVID-19 Design Challenge Finalist (**$8000**), Columbia University

Teaching

F23, S24 T.A. at University of Colorado Boulder for CSCI 3302: Introduction to Robotics
F20, S21 T.A. at Columbia University for MECE 4058: Mechatronics and Microcontrollers

Professional Experience

2022 Research Intern, Snap Inc. Computational Imaging Lab
Gesture recognition with wearable rings, hand reconstruction, magnetic field sensing
Advisors: Shree Nayar, Guru Krishnan, Karl Bayer
2022 Kinetic Sculpture Engineer, collaboration with Mimi Park displayed at Lubov
2021 Software Development Intern on OSAM-1, NASA Goddard Space Flight Center
2020 Satellite Servicing Software Intern on OSAM-1, NASA Goddard Space Flight Center
2019 Mechatronics Intern, Columbia University Department of Mechanical Engineering
2018 - 2022 Laboratory Technician, Columbia University Department of Mechanical Engineering

Service and Open-Source Contributions

2025 - Mentor, Fundamentals of Undergraduate Research Program (FUTURE)
Introduce first-year undergraduate students to robotics research via tailored research projects, curriculum and tools scaffolding, and weekly hands-on advising.
2025 - Developer, open-source Inspire RH56 dexterous hands controller and force calibration
2022 - 2024 Technical Lead, Cantonese Medical Handbook, Advisor: Fiona Hui
2020 Technical Lead, VentCU Open Source Ventilator in COVID-19 Design Challenge
2018 - 2023 Lead Technical Mentor, 2 Train Robotics in FIRST Robotics Competition
Guided over 150 high school students through full-stack robotics development.

Mentorship

2023 - 2025 Jensen Lavering, Undergraduate RA, **co-author on first-tier conference paper**
2024 - Jasmitha Gourabathini, Undergraduate RA (via FUTURE)
2025 - Xuan Tan, Undergraduate RA
2025 - Artemis S., Undergraduate RA, now **PhD Student at CU Boulder**
2025 - Adam Abid, Undergraduate RA (via FUTURE)
2026 - Paul Afriyie, Undergraduate RA (via FUTURE)
2026 - Jason Chen, Undergraduate RA

Reviewer

IEEE Transactions on Robotics (T-RO): 2024, 2025
PMLR Conference on Robot Learning (CoRL): 2024, 2025
Robotics: Science and Systems (RSS): 2025
IEEE Robotics and Automation Letters (RA-L): 2025
IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS): 2025, 2026
IEEE International Conference on Robotics and Automation (ICRA): 2025, 2026