XIHANG YU (JIMMY)

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EDUCATION

UNIVERSITY OF MICHIGAN, COLLEGE OF LITERATURE, SCIENCE, AND THE ARTS — ANN ARBOR, MI
B.S. in Computer Science with Honors, B.S. in Mathematics, CGPA: 4.0 /4.0 — *Jan 2022 – May 2024(Expected)*
COLUMBIA UNIVERSALITY, COLUMBIA COLLEGE — NEW YORK, NY
Visiting Student Program in Computer Science track, GPA: 4.0/4.0 — *Sep 2021 - Dec 2021*
CHINESE UNIVERSITY OF HONG KONG, DEPT. OF COMPUTER SCIENCE — HONG KONG
Major in Artificial Intelligence: Systems and Technologies, CGPA: 3.869/4.0 — *Sep 2019 - May 2021*

PUBLICATION

X. Yu, S. Teng, T. Chakhachiro, W. Tong, T. Li, TY. Lin, S. Koehler, M. Ahumada, JM. Walls, M. Ghaffari, "Fully Proprioceptive Slip-Velocity-Aware State Estimation for Mobile Robots via Invariant Kalman Filtering and Disturbance Observer", *2023 IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)* (acceptance rate: 43.3%)[arXiv]
X. Yu, H. Yang, "SIM-Sync: From Certifiably Optimal Synchronization over the 3D Similarity Group to Scene Reconstruction with Learned Depth", *In submission.* [arXiv]

RESEARCH AND INTERNSHIP

CERTIFIABLE ALGORITHM AND SEMIDEFINITE PROGRAMMING | HARVARD UNIVERSITY
Visiting Scholar Supervised by Dr. Heng Yang (Computational Robotics Lab) — *May 2023– Aug 2023*
- Developed certifiably correct camera trajectory estimation algorithm using semidefinite programming

MANIPULATION AND ROBOT PERCEPTION | ROBOTICS INSTITUTE, UNIVERSITY OF MICHIGAN
Research Assistant Supervised by Dr. Chad Jenkins (Lab for Progress) — *Sep 2022– Present*
- Honors Thesis: Developing language-conditioned object grasping algorithm (In development)

MOBILE ROBOT | ROBOTICS INSTITUTE, UNIVERSITY OF MICHIGAN
Research Assistant Supervised by Dr. Maani Ghaffari (Curly Lab) — *Jan 2022 – Sep 2022*
- Conducted research on state estimation using Invariant Extended Kalman Filter

REHABILITATION ROBOT | MECHANICAL ENGINEERING DEPT., COLUMBIA UNIVERSITY
Research Assistant Supervised by Dr. Sunil K Agrawal (ROAR Lab) — *Dec 2021 – May 2022*
- Contributed kinematics and dynamic libraries to wheelchair robot for active postural support using rospy. [website]

HUAWEI TECHNOLOGIES CO., LTD
Software Engineer Internship — *June 2021 - Aug 2021*
- Contributed to code auto-generation frame on HUAWEI OptiX OSN1800 OTN communication platform

LYAPUNOV STABILITY AND FINITE-TIME CONTROL | CUHK SUMMER RESEARCH INTERNSHIP
Research Assistant Supervised by Dr. Dongkun Han — *May 2020 - Aug 2020*
- Designed CBF-based coordination controller in Multiagent Systems with Matlab simulation [video]

EXTRACURRICULAR ACTIVITIES AND SERVICE

TEACHING ASSISTANT | ROB 530 MOBILE ROBOTICS, UNIVERSITY OF MICHIGAN
Instructor: Dr. Maani Ghaffari — *Jan 2023 - Apr 2023*
- Developed homework and quizzes and organized office hour sessions in the graduate course with 158 students

AUTONOMOUS VEHICLES DEVELOPMENT | COLUMBIA UNIVERSITY ROBOTICS CLUB
Motion Planning Subteam Leader — *Sep 2021 - Dec 2021*
- Organized workshops in motion planning (A* / D* / DWA)

HONORS AND COMPETITION AWARDS

LEUNG SIU KOI SCHOLARSHIP, CUHK *Academic Merit* — *Dec 2021*
ELITE STREAM SCHOLARSHIP, CUHK *Academic Merit* — *Oct 2021*
DEAN'S LIST, CUHK *Top 10% in the department* — *Aug 2021, Aug 2020*
CHUNG CHI COLLEGE CLASS SCHOLARSHIP, CUHK *Best student in the class of a department* — *Nov 2020*
TALENT DEVELOPMENT SCHOLARSHIP, HONG KONG GOVERNMENT EDUCATION BUREAU — *May 2020*
NATIONAL CREATIVE COMPOSITION COMPETITION *Grand Prize (10 awards in total, National-level）* — *Aug 2018*
SECOND PRIZE CHINESE MATHEMATICAL OLYMPIAD (CMO) 35TH, CHINESE MATHEMATICS SOCIETY — *Oct 2018*
SECOND PRIZE CHINESE PHYSICS OLYMPIAD 35TH, NATIONAL PHYSICS COMPETITION COMMITTEE — *Oct 2018*

SKILLS AND RESEARCH INTERESTS

- Robotics and Programming Tool: C/C++, Python, Linux, Git, MATLAB, ROS, CUDA, NVIDIA Issac Gym, PyBullet
- Research Interests: Optimization, Robot Perception, Vision-based Control
- Hobbies: soccer, cooking, reading, traveling