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 (Honors Program), B.S. in Mathematics (GPA: 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
Transferred to the University of Michigan, Ann Arbor (GPA: 3.869/4.0)   *Sep 2019 - May 2021*

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]

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", *IROS 2023*. [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]

EXTRACURRICULAR ACTIVITIES AND SERVICE

TEACHING ASSISTANT, ROB 530 MOBILE ROBOTS (GRADUATE COURSE WITH 158 STUDENTS) *Jan 2023 - Apr 2023*
- Developed homework and quizzes and organized office hour sessions

AUTONOMOUS VEHICLES DEVELOPMENT, COLUMBIA UNIVERSITY ROBOTICS CLUB   *Sep 2021 - Dec 2021*
- Led motion planning subteam and organized workshops in planning workshops (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