

Yuhao Zhou

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Research Interests	Humanoid Robot, Mobile Robot, Machine Learning	
Education	The University of Tokyo Tokyo, Japan - M.Eng., Department of Precision Engineering 09/2021 - 09/2023(expected) - Supervisor: Prof. Jun Ota	
	Guangdong University of Technology Guangzhou, China. PR - B.Eng., School of Automation 09/2016 - 06/2020 - Thesis: <i>System Design of Flying Humanoid</i> . [PDF] - Supervisor: Prof. Zhifeng Huang	
	Nanyang Technological University Singapore - School of Electrical and Electronic Engineering 01/2021 - 05/2021	
	Northeastern University Boston, MA, USA - Department of Electrical & Computer Engineering 06/2020 - 08/2020	
Publications	Conference [1] Zhifeng Huang, Zijun Wang, Jiapeng Wei, Jingtao Yu, Yuhao Zhou , Pihao Lao, Xiaoliang Huang, Xuexi Zhang, & Yun Zhang, "Three-Dimensional Posture Optimization for Biped Robot Stepping Over Large Ditch based on a Ducted-fan Propulsion System," in IROS'20 , [PDF] [Video]	
Research Experience	Jet Power & Humanoid Robot Laboratory 10/2018 - 10/2020 PI & Supervisor: Prof. Zhifeng Huang <ul style="list-style-type: none"> Conducted experiments utilizing the optimized genetic algorithm to minimize the thrust by optimizing the humanoid robot <i>Jet-HR1</i>'s posture during 3D stepping to accomplish large obstacle-crossing motion [1] Conducting research on flying humanoid robot <i>Jet-HR2</i> with optimized mechanical, embedded system, and control strategy to accomplish versatile dynamic motions 	
Projects	Mobile Robot: Ares 10/2017 - 01/2018 <ul style="list-style-type: none"> Designed and built the mechanical and circuit system of the 15kg mobile robot, alleviated the gyroscopic inertia in manipulation by optimizing the design of the drum spinner weapon system Lead a team of 3 & as the manipulator, participated in the first robot combat competition series in China 	
	Humanoid Robot: Jet-HR1 10/2018 - 10/2020 <ul style="list-style-type: none"> A prototype disaster-response humanoid robot innovatively utilized the ducted-fan propulsion system for balancing the gravitational moment [Video] Conduct experiments based on 2D & 3D gaits to accomplish large obstacle-crossing (97% of the robot's leg length, and a height difference of 100mm between two sides) 	
	Jet-Powered Flying Humanoid Robot: Jet-HR2 01/2019 - 10/2020 <ul style="list-style-type: none"> A 12 DoFs disaster-response humanoid robot with 6 ducted-fans installed at the pelvis and feet to have the capacity of flight, contact locomotion, and manipulation Independently designed the mechanical system of the robot with special modular joint featured with lightweight, high precision, and high torque Implemented dynamic simulations of the prototype robot in PyBullet Led the design, fabrication, and experiments of prototype robot such as jet-jumping, hovering, and flying motions Algorithm focused on <i>Whole-Body Loco-Manipulation</i> and <i>Aerial Manipulation</i> 	

Advanced Course Projects	TMP1170 Electrical Testing Technology (Guangdong U of Tech) 18 Fall Semester Designed and implemented a high-precision speed detection system for electro-hybrid powered vehicles. Showed that the accuracy of the velocity testing system meets the requirement with a tolerance of less than $\pm 1\text{RPM}$ [Highest Score among 269 students]	
	EECE7398 ST: Building Blocks for IoT (Northeastern U) 20 Summer Semester Implemented a correlation power analysis (CPA) attack and recover a full round key used in an AES encryption process; Designed, implement and test an orthogonal frequency division multiplexing (OFDM) receiver in the modern wireless communication system [Score 87.8%, B+]	
Professional Experience	CloudMinds Robotics Co., Ltd. Beijing, China. PR Hardware Engineering Intern, R&D Department 07/2019 - 08/2019 <ul style="list-style-type: none"> Hardware test and optimized modification on the cloud <i>Pepper</i> humanoid service robot manufactured by <i>SoftBank Robotics</i> 	
Awards	Student Awards Guangdong University of Technology <ul style="list-style-type: none"> Outstanding Bachelor's Degree Graduation Thesis Award (Top 5%) 06/2020 Northeastern University <ul style="list-style-type: none"> NU's Summer Scholarship 06/2020 	
	Contest Awards FMB Competition Championship Organizer: <i>Shanghai Jizhan Sports & Culture Development Co., Ltd.</i> — The first robot combat series competition held in China, as Team Leader <ul style="list-style-type: none"> 3rd Place, Jiaxing, Autumn Season 10/2017 4th Place in Domestic Group, Sanya, All-Star Invitational 01/2018 Final Eight in International Group, Sanya, All-Star Invitational 01/2018 The 16 th Challenge Cup Organizer: <i>Ministry of Education of China</i> — National College Student Curricular Academic Science and Technology Works Competition, as Team Member <ul style="list-style-type: none"> 3rd Award, School-level 03/2019 College Students' Innovative Entrepreneurial Training Plan Program Organizer: <i>Ministry of Education of China</i> <ul style="list-style-type: none"> School-level funded project, NO. XJ2019118451521, as Team Leader 03/2020 [Project Completed with Good Evaluation] State-level funded project, NO. 201911845010, as Team Member 03/2020 [Project Completed with Outstanding Evaluation] 	
Skills	Design - AutoCAD, SolidWorks Programming - Python, MATLAB	