Qiyuan WU

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EDUCATION

Cornell University, Ithaca, USA Aug 2023-Present

PhD student, mechanical engineering: robotics. Advisor: Mark Campbell

Johns Hopkins University, Baltimore, USA Aug 2021-May 2023

Master of Science in Engineering, mechanical engineering: robotics. Advisor: Axel Krieger

Shanghai Jiao Tong University, Shanghai, China Sept 2016-Jul 2020

Bachelor's Degree, applied & computational mechanics

PUBLICATIONS

Qiyuan Wu and Mark Campbell. "Semantic and Feature Guided Uncertainty Quantification of Visual Localization for Autonomous Vehicles" ICRA 2025.

Aslan, Seda, Xiaolong Liu, **Qiyuan Wu**, Paige Mass, Yue-Hin Loke, Jed Johnson, Joey Huddle, Laura Olivieri, Narutoshi Hibino, and Axel Krieger. "Virtual planning and patient-specific graft design for aortic repairs." Cardiovascular engineering and technology 15, no. 2 (2024): 123-136.

Cleveland, Vincent, Jacqueline Contento, Paige Mass, Priyanka Hardikar, **Qiyuan Wu**, Xiaolong Liu, Seda Aslan et al. "In vitro investigation of axial mechanical support devices implanted in the novel convergent cavopulmonary connection Fontan." European Journal of Cardio-Thoracic Surgery 65, no. 1 (2024): ezad413.

Sinha, Pranava, Jacqueline Contento, Byeol Kim, Kevin Wang, **Qiyuan Wu**, Vincent Cleveland, Paige Mass, Yue-Hin Loke, Axel Krieger, and Laura Olivieri. "The convergent cavopulmonary connection: a novel and efficient configuration of Fontan to accommodate mechanical support." JTCVS open 13 (2023): 320-329.

Wu, Qiyuan. "AN AUTOMATED SYSTEM FOR GEOMETRIC DESIGN AND HEMODYNAMIC SIMULATION OF AORTIC REPAIR." PhD diss., Johns Hopkins University, 2023.

Wu, Qiyuan, Vincent Cleveland, Seda Aslan, Xiaolong Liu, Jacqueline Contento, Paige Mass, Byeol Kim et al. "Hemodynamics of Convergent Cavopulmonary Connection with Ventricular Assist Device for Fontan Surgery: A Computational and Experimental Study." In Bioinformatics, pp. 51-58. 2023.

Hardikar, Priyanka, Vincent Cleveland, Jacqueline Contento, Paige Mass, **Qiyuan Wu**, Yue-Hin Loke, Axel Krieger, Pranava Sinha, and Laura Olivieri. "Re-Imagining Fontan Support: Novel Cavopulmonary Connection Can Accommodate Mechanical Circulatory Support, Augment Cardiac Output and Balance Hepatic Flow." Circulation 146, no. Suppl_1 (2022): A12169-A12169.

Khodakarami, Siavash, Hanyang Zhao, Kazi Fazle Rabbi, **Qiyuan Wu**, Jingcheng Ma, and Nenad Miljkovic. "Slippery omniphobic covalently attached liquid coatings mitigate carbon deposition by autoxidation of jet fuel." Cell Reports Physical Science 3, no. 5 (2022).

Wu, Qiyuan, Yuri Vassilevski, Sergey Simakov, and Fuyou Liang. "Comparison of algorithms for estimating blood flow velocities in cerebral arteries based on the transport information of contrast agent: An in silico study." Computers in biology and medicine 141 (2022): 105040.

Aslan, Seda, Xiaolong Liu, **Qiyuan Wu**, Paige Mass, Yue-Hin Loke, Narutoshi Hibino, Laura Olivieri, and Axel Krieger. "Virtual planning and simulation of coarctation repair in hypoplastic aortic arches: is fixing the coarctation alone enough?." In Bioinformatics, pp. 138-143. 2022.

Zhao, Hanyang, Siavash Khodakarami, Chirag Anand Deshpande, Jingcheng Ma, **Qiyuan Wu**, Soumyadip

Sett, and Nenad Miljkovic. "Scalable slippery omniphobic covalently attached liquid coatings for flow fouling reduction." ACS applied materials & interfaces 13, no. 32 (2021): 38666-38679.

HONORS&AWARDS

Aug 2023	Cornell Fellowship
Jul 2020	National Award for Outstanding Bachelor's Thesis (awarded by the Ministry of Education of China, top 32 nationwide)
Dec 2017 & Dec 2019	Academic Excellence Scholarship of Shanghai Jiao Tong University
Dec 2017	First Prize, National College Student Physics Competition (China)

RESEARCH EXPERIENCE

Autonomous Systems Lab, Cornell Aug 2023-Present

➢ Advised by Prof. Mark Campbell and collaborated with Prof. Kilian Weinberger and Prof. Bharath Hariharan.

➢ PhD research covers topics of robotics and artificial intelligence, including computer vision, large-scale deep learning, self-driving, perception and estimation.

ARCADE Lab, JHU Jan 2022-May 2023

➢ Advised by Prof. Mathias Unberath and Russell H. Taylor as a graduate research assistant.

➢ Developed a tissue segmentation pipeline for DeepDRR (a framework for digital reconstructed radiography) based on state-of-the-art multi-organ segmentation tools (nnU-Net, TotalSegmentator).

IMERSE Lab, JHU May 2021-May 2023

➢ Advised by Prof. Axel Krieger and Dr. Xiaolong Liu as a graduate research assistant.

➢ Worked on planning and optimization of cardiac surgery, including design optimization of patient specific grafts, 2D/3D image analysis, and cardiac simulation.

Liang Lab, SJTU Oct 2019 – Nov 2021

➢ Advised by Prof. Fuyou Liang as an undergraduate researcher. Worked on multi-order modeling and numerical methods for cardiovascular applications.

TEACHING EXPERIENCE

Medical Image Analysis, Johns Hopkins EN.520.623 Spring 2023

➢ As head TA, helped Prof. Jerry Prince runs the course of about 60 students.

➢ Led homework creation, final project organization, and exam grading. Held office hours and taught hands-on instructions.