HAOCHEN SHI

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EDUCATION

UNIVERSITY OF WISCONSIN-MADISON 09/2018 – expected 05/2021

Computer Sciences BS, Honors in the Major; Game Design Certificate

- GPA: 4.0/4.0

AWARDS

- Dean's List in Fall 2018, Spring 2019, Fall 2019, and Spring 2020
- 2020 UW-Madison CS Undergraduate Summer RAship Award

EXPERIENCES

Research Assistant 05/2020 - Present

Collaborative Robotics Laboratory, UW-Madison. Advisor: Prof. Michael Gleicher and Prof. Bilge Mutlu

- Implemented wrappers of RelaxedIK (an inverse kinematics solver designed for generating accurate and feasible motion on robot platforms) for various interfaces, such as ROS, ROS2, CoppeliaSim, Mujoco, and Unity
- Developed a per-instant pose optimization method called CollisionIK for generating robot motions with environment collision avoidance and submitted a paper as a second author on this work to ICRA 2021

Peer Mentor 01/2020 - 05/2020

COMP SCI 559: Computer Graphics

- Held office hours 5 hours per week to help students with concept and assignment questions
- Programmed clear demonstrations for the professor to use as examples in lectures and for students to experiment with
- Prepared example solutions to programming assignments for students to review

Peer Tutor 09/2019 - 05/2020

Undergraduate Learning Center, College of Engineering, UW-Madison

- Supported more than 100 students in 9 Math and Computer Science courses by working through key concepts and providing insights into their homework and projects
- Contributed the second most one-on-one tutoring sessions among all tutors of Undergraduate Learning Center in Fall 2019

Game Designer, Developer, and Manager

UW-Madison Game Design and Development Club 02/2019 - Present

- Designed board and video games across various genres, such as abstract game, Micro RPG, and

polemical game
- Developed a roguelike game to teach players how to prevent the transmission of COVID-19
- Built a Sudoku solver website to help players learn traditional Sudoku solving techniques
- Designed and implemented an educational browser game to teach garbage classification
- Developed a 2D tank-shooting game in which players play against tanks driven by my algorithms

PUBLICATIONS

Referred full conference papers

- Daniel Rakita, Haochen Shi, Bilge Mutlu, Michael Gleicher. 2020. *CollisionIK*: A Per-Instant Pose Optimization Method for Generating Robot Motions with Environment Collision Avoidance. IEEE International Conference on Robotics and Automation (ICRA). [Under review]

SKILLS

- Programming languages: Python, Rust, C++, JavaScript, HTML, CSS, Java, C, C#, MATLAB
- Software: ROS, ROS2, MoveIt, CoppeliaSim, Mujoco, Unity, Rhino, React, React Native, Dialogflow, Photoshop, Premiere Pro, After Effects