Mikihisa Yuasa

(608) 770-5296 | myuasa2@illinois.edu | linkedin.com/in/mikihisa-yuasa | miki-yuasa.github.io

Education

University of Illinois Urbana-Champaign, Champaign, IL — Expected May 2026
Ph.D. in Aerospace Engineering — GPA: 3.41/4.00

University of Wisconsin-Madison, Madison, WI — Aug 2017 – May 2021
B.S. in Engineering Mechanics — GPA: 3.68/4.00

Work & Research Experience

Graduate Research Assistant, *Dr. Huy Tran's Reinforcement Learning Research Group* — Aug 2021 – Present

- Developed safe and verifiable AI and deep reinforcement learning framework using formal methods
- Designed a neural network from scratch, which infers robot behaviors in human-readable forms
- Applied the framework for motion planning of robots and autonomous vehicles (Sim2Real)

Research Assistant, *Dr. Bin Ran's Connected Automated Vehicles & Highways Lab* — Sep 2019 – May 2021

- Conducted macroscopic mixed conventional and automated traffic simulations under severe weather
- Led a group to create a following model for automated vehicle platoons using modern control theories

Research Assistant, *Dr. Jennifer Franck's Computational Fluid Dynamics Lab* — May 2018 – May 2021

- Built a distributed computing algorithm to dynamically generate meshes around bioinspired structures
- Implemented the algorithm as an opensource HPC software library for a CFD simulation solver in C++

Publication

Yuasa, M., Lyons, K., & Franck, J. A. "Simulations of flow over a bio-inspired undulated cylinders with dynamically morphing topography," *Journal of Fluids and Structures*, vol. 111, p. 103567, 2022 doi:10.1061/j.jfluidstructs.2022.103567

"Flow simulations of bio-inspired undulated cylinders through dynamic morphing of surface topography," Computing in Engineering Forum 2020 of Grainger Institute for Engineering

Presentation

Yuasa, M., Lyons, K., & Franck, J. A. "Simulations of bio-inspired undulated cylinders through dynamic morphing of surface topography," presented at the 73rd Annual Meeting of American Physical Society Division of Fluid Dynamics, Chicago, IL, United States, 2020. http://meetings.aps.org

Yuasa, M., Lyons, K., & Franck, J. A. "Flow simulations of bio-inspired undulated cylinders through dynamic morphing of surface topography," Computing in Engineering Forum 2020 of Grainger Institute for Engineering, Madison, WI, United States, 2020

Technical Skills & Awards

Programming	C++, Python, MATLAB, R, JavaScript, TypeScript, HTML/CSS, Rust, Julia, EES, C#, LaTeX
Software	PyTorch, TensorFlow, SOLIDWORKS, ANSYS, OpenFOAM, Tecplot, PTV Vissim, ParaView, Pointwise, Maple, UNIX (Linux), GPGPU
Languages	Japanese, French
Awards	Japan Student Services Organization Student Exchange Program (Undergraduate Scholarship for Degree Seeking Students), Hilldale Undergraduate/Faculty Research Fellowship

Work Experience

Graduate School Application Counselor, *XPLANE* — April 2021 – Present

- Instructed essay writing for graduate school applications in North America
- Counselled graduate school applications and career paths for North-American graduate programs

Technical Intern, *Solid Oxide Fuel Cell Team, Bosch Japan* — Jul 2021 – Aug 2021

- Created educational materials to launch business targeting the hydrogen fuel cell industry in Japan
- Investigated potential market demands for solid oxide fuel cells in Japan

College Application Counselor, *J PREP*, Tokyo, Japan April 2017 – Aug 2017

- Tutored solution processes of standardized test problems in Math, Physics, and Chemistry
- Consulted the admission processes of American colleges

AWARDS

2020	Hilldale Undergraduate/Faculty Research Fellowship
2020	Honorable Mention at Computing at Grainger Engineering Forum 2020
2017-2021	Japan Student Services Organization Student Exchange Program Scholarship
2018-19	Engineering Physics Department Scholarship
2018	UW-Madison Undergraduate Scholarship for Summer Study