Zhong Fang johnfangz.github.io

Waterloo, Ontario, Canada

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PROFILE

MASc in Electrical and Computer Engineering with expertise in optimization and control of cyber-physical systems. My research focused on developing tractable and efficiently solvable control design methods with rigorous theoretical guarantees.

EDUCATION

University of Waterloo, Waterloo, Canada

September 2023 - August 2025

M.A.Sc., Electrical and Computer Engineering

Advised by Dr. Michael W. Fisher

Coursework: Fundamentals of Optimization, Optimization Methods, Distributed Optimization, Multivariable Control, Stochastic Control, Nonlinear Control

- Thesis: Convex Reparameterizations for Efficient Mixed $\mathcal{H}_2/\mathcal{H}_{\infty}$ Feedback Control [Thesis]

Wuhan University, Wuhan, China

September 2019 - June 2023

B.Sc., Applied Mathematics

- Thesis: Algebraic Connectivity Analysis of Directed Double-Ring Network

PUBLICATIONS

- [1] **Z. Fang** and M. W. Fisher, "Hybrid State Space and Frequency Domain System Level Synthesis for Sparsity-Promoting $\mathcal{H}_2/\mathcal{H}_{\infty}$ Control Design," in 2024 IEEE 63rd Conference on Decision and Control (CDC), pp. 8473–8478, 2024. [Paper]
- [2] **Z. Fang** and M. W. Fisher, "Constrained $\mathcal{H}_2/\mathcal{H}_{\infty}$ Control Design of Dynamic Virtual Power Plants via System Level Synthesis and Simple Pole Approximation," in 2025 IEEE Electrical Power and Energy Conference (EPEC), 2025, to appear. [Paper]

PRESENTATIONS

MASc Seminar, University of Waterloo [Slides] [Slides_Handout]	2025
IEEE Conference on Decision and Control in Milan, Italy [Slides] [Slides_Handout]	2024

IEACHING
EXPERIENCE

ECE 207	Signals and Systems	Spring 2025
MATH 213	Signals, Systems, and Differential Equations	Winter 2025
MTE 484	Control Applications	Fall 2024
ECE 608	Quantitative Methods in Biomedical Engineering	Spring 2024
NE 488B	Nano-instrumentation Lab	Winter 2024

COMMUNITY INVOLVEMENT

UW ECE Mentorship Program, Mentor	2025
American Control Conference, Student Volunteer	2024
WHU Math Undergrad-Mentor Program, Mentor	2021 - 2022
WHU Mathematical Modeling Association, Director	2019 - 2022

HONORS AND AWARDS

International Master's Award of Excellence, Graduate Research Studentship

- 2 years of full tuition support, University of Waterloo

2023 - 2025

School of Mathematics Scholarship (9/math undergrads), Wuhan University

National First Prize (292/45075), China Undergrad Mathematical Contest in Modeling

2021

REFERENCES

Dr. Michael W. Fisher michael.fisher@uwaterloo.ca

Assistant Professor of Electrical and Computer Engineering, University of Waterloo

Dr. Stephen L. Smith stephen.smith@uwaterloo.ca
Professor of Electrical and Computer Engineering, University of Waterloo

Dr. Jun Liu j.liu@uwaterloo.ca Professor of Applied Mathematics, University of Waterloo