

Zhicheng ZHANG — CV

Department of Electrical Engineering
Chair of Advanced Electrical Systems Theory, Kyoto University
Katsura, Nishikyo-Ku, Kyoto 615-8510, Japan
☎ +81 070-4021-4476 • ✉ zhang.zhicheng.2c@kyoto-u.ac.jp
🌐 [zc-zhang.github.io](https://github.com/zc-zhang)

“There is nothing certain, but the uncertain.” — Proverb

Z. Zhang received B.A. degree in Japanese from Changzhou Institute of Technology, Changzhou, China, in 2017 and the M.Sc. degree in Mathematics from Guilin University of Electronic Technology, Guilin, China, in 2020, and Ph.D. degree in Informatics from Osaka University, Suita, Japan, in 2024. From 2019 to 2020, he was a visiting graduate student at EECS at The University of Kitakyushu, Fukuoka, Japan. He is currently a Postdoctoral Researcher at Kyoto University, Katsura, Japan. His research interests are in Koopman operator theory, sparse modeling, robust optimization and nonlinear networked control. He is a student member of IEEE, SIAM and INFORMS.

Position and Experience

Kyoto University

Postdoctoral Researcher, Department of EE
Fields: Koopman Operator Theory for Weather Control
Supervisor: Prof. Yoshihiko Susuki

Kyoto, Japan
2024.04 – present

The University of Kitakyushu

Visiting Scholar (Master Student), EECS
Fields: Sparse Modeling and Optimal Control
Supervisor: Prof. Masaaki Nagahara

Fukuoka, Japan
2019.09 – 2020.09

Education

Osaka University

Ph.D, Informatics
Fields: Robustness for Sparse Optimal Control
Advisor: Prof. Yasumasa Fujisaki

Osaka, Japan
2020.10 – 2024.03

Guilin University of Electronic and Technology

M.S., Mathematics
Fields: ODEs and Dynamical Systems Theory
Advisor: Prof. Zhongjun Ma

Guilin, China
2017.09 – 2020.06

Changzhou Institute of Technology

B.A., Japanese (Major)
B.S., Applied Mathematics (Minor)

Changzhou, China
2013.09 – 2017.06

Research Interests

- Decision Making under Uncertainty
 - ♣ Robust optimization ♣ Stochastic Programming
- Sparse Modeling
 - ♣ Sparse Optimization ♣ Sparse Optimal Control
- Networked Control

Honors and Awards

- 2020 Guangxi Outstanding Graduates, China, 2020 (top 1%)
- Outstanding Master's Thesis of GUET, China, 2020 (top 3%)
- Postgraduate Scholarship, First Prize, GUET, China, 2019, 2020 (top 3%)
- Graduate Fellowship for Study Abroad, GUET, China, 2019
- National Scholarship for Master's Student, China, 2019 (top 3%)

Research Projects and Academic Foundations

Practical Stability of Nonlinear Dynamical Systems

Collaborator, School of Mathematics and Computing Science, GUET 2017.10 – 2018.06

- The Innovation Project of GUET Graduate Education, Grant No. 2017YJCX79 (CNY 10,000)

Stability of Impulsive Ordinary Differential Equations and its Applications

Co-Investigator (CI), School of Mathematics and Computing Science, GUET 2018.10 – 2019.06

- The Innovation Project of GUET Graduate Education, Grant No. 2018YJCX60 (CNY 10,000)

Intermittent Feedback Control of Nonlinear Multi-Agent Systems

Principal Investigator (PI), School of Mathematics and Computing Science, GUET 2018.12 – 2020.06

- Cultivation of Excellent Thesis Project of GUET Graduate Education, Grant No. 2018YJSPY01 (CNY 10,000)

Cooperative Control of Multi-Agent Networked Systems

Principal Investigator (PI), School of Mathematics and Computing Science, GUET 2019.09 – 2020.08

- The Study Abroad Program for Graduate Student of GUET, Grant No. GDYX2019015 (JPY 1,800,000)

Partial Component Synchronization of Nonlinear Networks and its Applications

Collaborator, School of Mathematics and Computing Science, GUET 2019.01 – 2021.12

- Guangxi Natural Science Foundation, China, Grant No. 2018GXNSFAA281068 (CNY 50,000)

Positions of Responsibility

- **Teaching Assistant** for Undergraduate courses like *Mathematical Analysis*, *Advanced Algebra*, and *Calculus*.
- **Teaching Assistant** for Graduate courses like *operations research*, and *research seminars*.

Professional Service

Reviewer (Journals & Conferences)

- International Journal of Robust and Nonlinear Control (IJRNC)
- IEEE Transactions on Systems, Man and Cybernetics (IEEE TSMC)
- IFAC Symposium on Robust Control Design (ROCOND 2022)
- IFAC World Congress (2023)
- European Control Conference (ECC 2024)
- IEEE Int. Conf. Advanced Robotics and Mechatronics (ICARM 2024)

Publications

Peer Review Journals

[J2] Z. Zhang and Y. Fujisaki, "Sparse feedback controller: From open-loop solution to closed-loop realization," *SICE Journal of Control, Measurement, and System Integration*, 2023, Vol. 16, No. 1, 286–296.

arXiv.2303.15175

Doi: 10.1080/18824889.2023.2237234.

[J1] Z. Zhang, Z. Ma and Y. Wang, "Partial component consensus of leader-following multi-agent systems via intermittent pinning control," *Physica A: Statistical Mechanics and its Applications*, 2019, 536: 122569.

Doi: 10.1016/j.physa.2019.122569.

Proceeding Conferences

[C6] Z. Zhang and Y. Fujisaki, "Data-driven sparse feedback control with Schur- α stability," *SICE International Symposium on Control System (ISCS'24)*, Hiroshima, Mar., 2024.

[C5] Z. Zhang and Y. Fujisaki, "Risk assessment for sparse optimization with relaxation," *The 55th ISCIE International Symposium on Stochastic System Theory and Its Applications (SSS'23)*, Tokyo, Nov., 2023, p.4A3.

[C4] Z. Zhang and Y. Fujisaki, "Risk-aware sparse predictive control", *Preprint of the 22nd IFAC World Congress*, Yokohama, Jul., 2023, pp. 1477-1480.

[C3] Z. Zhang and Y. Fujisaki, "Sparse feedback control realization using linear dynamic compensator," *SICE International Symposium on Control System (ISCS'23)*, Kusatsu, Mar. 2023, p. 3M1.4.

[C2] Z. Zhang and Y. Fujisaki, "Sparse robust control design via scenario optimization", *Proceeding ISCIE International Symposium on Stochastic System Theory and Its Applications (SSS'21)*, Kusatsu, Oct., 2022, pp. 61-64.

[C1] Z. Zhang and M. Nagahara, "Linear quadratic tracking control with sparsity-promoting regularization," *2021 American Control Conference (ACC'21)*, IEEE, May 2021. pp. 3812–3817.

Preprints

[P2] Z. Zhang, Z. Ma, Y. Wang and K. Li, "Wait-and-track characteristics for a generic multiagent system under control input attacks," Submitted to *IEEE Trans. Control of Network Systems*, 2023.

[P1] Z. Zhang and Z. Ma, "Lag synchronization for large-scale complex networks under stochastic input disturbances," *Chaos: An Interdisciplinary Journal of Nonlinear Science*. 2023, (under review)

Thesis

[T1] Master's Thesis: Consensus of Classes of Nonlinear Multi-agent Network Systems via Intermittent Control, *China National Knowledge Infrastructure (CNKI)*, June, 2020 (in Chinese)

[T2] Ph.D. Thesis: Modeling, Robustness and Stability for Sparse Optimal Control of Dynamical Systems, Osaka University, March, 2024.

Technical Strengths

- **Languages:** Chinese (native), Japanese (N2), and English (fluent).
- **Skills:** \LaTeX , Matlab, Python, Julia

Personal Information

- Born in Dec. 1994, in Jiangsu Province, China
- ⊗ Citizenship: Chinese

References

- **Yasumasa Fujisaki**
Department of Information and Physical Sciences
Osaka University
fujisaki@ist.osaka-u.ac.jp
- **Masaaki Nagahara**
Graduate School of Advanced Science and Engineering
Hiroshima University
nagam@hiroshima-u.ac.jp

- **Zhongjun Ma**
School of Mathematics and Computing Science
Guilin University of Electronic and Technology
mazhongjun@guet.edu.cn