MENGMOU LI

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School of Informatics and Data Science
Graduate School of Advanced Science and Engineering, Hiroshima University

ACADEMIC POSITIONS

Apr 2024 -	**Hiroshima University, Higashi-Hiroshima, Japan** Tenure-Track Associate Professor School of Informatics and Data Science Graduate School of Advanced Science and Engineering
Aug 2023 - Mar 2024	**Tokyo Institute of Technology, Tokyo, Japan** Specially Appointed Assistant Professor Department of Systems and Control Engineering
Aug 2022 - Aug 2023	**Tokyo Institute of Technology, Tokyo, Japan** Postdoctoral Researcher, Department of Systems and Control Engineering Advisor: Prof. Takeshi Hatanaka
Feb 2021 - July 2022	**University of Cambridge, Cambridge, UK** Research Associate, Department of Engineering Advisor: Prof. Ioannis Lestas
Oct 2020 - Jan 2021	**The Hong Kong University of Science and Technology, Hong Kong** Post-doctoral Fellow, Department of Electronic and Computer Engineering Advisor: Prof. Li Qiu
Sept 2019 - Dec 2019	**Osaka University, Osaka, Japan** Visiting Researcher, Graduate School of Engineering Host: Prof. Takeshi Hatanaka
Jan 2019 - Mar 2019	**The University of Hong Kong, Hong Kong** Research Assistant, Department of Electronic and Electronic Engineering Advisor: Prof. Graziano Chesi
Oct 2018 - Dec 2018	**Chinese Academy of Sciences, Beijing, China** Visiting Student, Key Laboratory of Systems and Control Host: Prof. Yiguang Hong

ACADEMIC QUALIFICATIONS

Sept 2016 - Aug 2020	**The University of Hong Kong, Hong Kong** PhD, Department of Electrical and Electronic Engineering Thesis: *Control Approaches to Distributed Optimization and Network Problems* Supervisor: Prof. Graziano Chesi
Sept 2012 - June 2016	**Zhejiang University, Hangzhou, China** Bachelor of Science, Department of Physics {GPA Rank: 6/84} Major in Physics and minor in Japanese
Sept 2009 - June 2012	**Huizhou No.1 Middle School, Huizhou, China** Ranked approximately 422/290000, College Entrance Examination on Science

SKILLS

Research Interests
Optimization, Distributed Control, Robust Stability, Power Systems, Cyber-Physical Systems
Analytical
Nonlinear Systems, Systems and Control, Convex Optimization, Game Theory

Languages
English, Mandarin, Japanese (N1), Cantonese, Teochew

HONORS

2016 - 2020	UPF Scholarship: HKU Foundation Postgraduate Fellowship
2015	National Scholarship, Department of Physics, Zhejiang University
2014	National Scholarship, Department of Physics, Zhejiang University

PROFESSIONAL SERVICES

Chairmanship

2023 Student Activities Co-Chairs, *IFAC World Congress 2023*, Yokohama, Japan

Referee for Journals and Conferences

Automatica
IEEE Transactions on Automatic Control
IEEE Transactions on Control of Network Systems
IEEE Transactions on Control Systems Technology
IEEE Control Systems Letters
IEEE Transactions on Circuits and Systems I: Regular Papers
IEEE Transactions on Circuits and Systems II: Express Briefs
International Journal of Control, Automation and Systems
IET Generation, Transmission & Distribution
IEEE Conference on Decision and Control
American Control Conference
European Control Conference

TEACHING

Lecturer

2024 Elements of Calculus Hiroshima University

Teaching Assistant

2022	Supervisor	Cambridge - 3F2-Systems and Control
2021	Demonstrator	Cambridge - IB Labs I2 Vehicle motion control/I3 Position control
2019 - 2020	Teaching Assistant	HKU CCST9015 - Electronic Technologies in Everyday Life
2018	Lab demonstrator	HKU ELEC3245 - Control and instrumentation
2017	Lab demonstrator	HKU ELEC3222/4242 - Robotics

FUNDING

1. 2024 - 2025, Grant-in-Aid for Research Activity Start-up, "Reconstruction of Absolute Stability of Multivariable Control Systems for Optimization Analysis".

PUBLICATIONS

* Corresponding author

Preprints

1. **M. Li***, T. Hatanaka, M. Nagahara, "On the Generalization of the Multivariable Popov Criterion for Slope-Restricted Nonlinearities," accepted by *CDC 2024*.

2. **M. Li***, K. Laib, T. Hatanaka, I. Lestas, "Convergence Rate Bounds for the Mirror Descent Method: IQCs, the Popov Criterion and Bregman Divergence," accepted as Regular Paper by *Automatica*.

3. G. Zuo, **M. Li**, L. Zhu, "Prescribed Finite-Time Synchronization of Networked Uncertain Euler-Lagrange Systems," resubmitted to *IEEE Transactions on Control of Network Systems*.

Journal Papers

1. T. Tanaka, A.D. Carnerero, **M. Li**, Y. Wasa, K. Hirata, T. Hatanaka, "Game-theoretic modelling and analysis of strategic investments for PV and shared battery," *SICE Journal of Control, Measurement, and System Integration*, vol. 17, no. 1, pp. 222–232, 2024.

2. A.D. Carnerero, T. Tanaka, **M. Li**, Y. Wasa, K. Hirata, Y. Ushifusa, T. Hatanaka, "Achieving Net-Zero Energy Houses With Photovoltaic Panels and Batteries," *IEEE Access*, vol. 12, pp. 80429–80441, 2024.

3. **M. Li***, T. Tanaka, A.D. Carnerero, Y. Wasa, K. Hirata, Y. Fujisaki, Y. Ushifusa, T. Hatanaka, "Stochastic Optimal Investment Strategy for Net-Zero Energy Houses," *IET Renewable Power Generation*, 2024.

4. **M. Li***, J. Watson, I. Lestas, "Distributed Optimal Secondary Frequency Control for Power Systems With Delay Independent Stability," *IEEE Transactions on Automatic Control*, vol. 69, no. 6, pp. 3748–3763, 2024.

5. **M. Li***, I. Lestas, L. Qiu, "Parallel Feedforward Compensation for Output Synchronization: Fully Distributed Control and Indefinite Laplacian," *Systems & Control Letters*, vol. 164, pp. 105250, 2022.

6. L. Su, **M. Li**, V. Gupta, G. Chesi, "Distributed Resource Allocation Over Time-Varying Balanced Digraphs With Discrete-time Communication," *IEEE Transactions on Control of Network Systems*, vol. 9, no. 1, pp. 487–499, 2022.

7. **M. Li***, G. Chesi, Y. Hong, "Input-Feedforward-Passivity-Based Distributed Optimization Over Jointly Connected Balanced Digraphs," *IEEE Transactions on Automatic Control*, vol. 66, no. 9, pp. 4117–4131, 2021.

8. **M. Li***, L. Su, T. Liu, "Distributed Optimization With Event-triggered Communication via Input Feedforward Passivity," *IEEE Control Systems Letters*, vol. 5, no. 1, pp. 283–288, 2021.

9. **M. Li***, S. Yamashita, T. Hatanaka, G. Chesi, "Smooth Dynamics for Constrained Distributed Optimization With Heterogeneous Delays," *IEEE Control Systems Letters*, vol. 4, no. 3, pp. 626–631, 2020.

10. S. Yamashita, **M. Li**, T. Hatanaka, "Robustification of Continuous-Time ADMM Against Communication Delays Under Non-Strict Convexity: A Passivity-Based Approach," *SICE Journal of Control, Measurement, and System Integration*, vol. 13, no. 6, pp. 299–305, 2020.

11. **M. Li**, L. Su, G. Chesi, "Consensus of Heterogeneous Multi-Agent Systems With Diffusive Couplings via Passivity Indices," *IEEE Control Systems Letters*, vol. 3, no. 2, pp. 434–439, 2019.

12. **M. Li***, "Generalized Lagrange Multiplier Method and KKT Conditions With an Application to Distributed Optimization," *IEEE Transactions on Circuits and Systems II: Express Briefs*, vol. 66, no. 2, pp. 252–256, 2019.

Conference Papers

1. T. W. Nguyen, R. Ito, **M. Li**, K. Hirata, "Toward a Standardized Framework for Developing Zero-Energy House Simulation Environments Using Reproducible Validation Tests", *11th SICE*

Multi-Symposium on Control Systems (MCSC),, 2024.

2. R. Xiong, H. Jing, **M. Li**, Y. Shi, M. Taya, T. Hatanaka, Y. Nakahira and P. Tang, "Optimizing HVAC Systems for Energy Efficiency and Comfort: A Scalable and Robust Multi-Zone Control Approach with Uncertainty Considerations", *2023 ASCE International Conference on Computing in Civil Engineering (i3CE)*, 2023.

3. **M. Li***, K. Laib, I. Lestas, "Convergence Rate Bounds for the Mirror Descent Method: IQCs and the Bregman Divergence," *2022 IEEE 61st Conference on Decision and Control (CDC)*, 6326–6331, 2022.

4. I. Papastaikoudis, **M. Li**, I. Lestas, "Hypergraph Based Distributed Quadratic Optimization", *25th International Symposium on Mathematical Theory of Networks and Systems (MTNS)*, 2022.

5. L. Zhu, Y. Zeng, **M. Li**, "Distributed Formation Control via Distributed Optimization," *17th IEEE International Conference on Control & Automation (ICCA)*, 874–879, 2022.

6. **M. Li***, G. Chesi, Y. Hong, "Input-Feedforward-Passivity-Based Distributed Optimization Over Directed and Switching Topologies," *58th IEEE Conference on Decision and Control (CDC)*, 6056–6061, 2019.

7. **M. Li***, T. Liu, "Distributed Robust Resource Allocation With Convex-Concave Uncertain Objective Functions," *57th Annual Conference of the Society of Instrument and Control Engineers of Japan (SICE)*, 368–373, 2018.