JUNYAN SU

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EDUCATION

Ph.D. in Data Science, City University of Hong Kong 2020-2025
B.E. in Computer Science and Technology, ShanghaiTech University 2015-2019

RESEARCH INTERESTS

My research interests are intelligent transportation systems, from the perspective of control and optimization. I also have broad interests in computing methods for energy systems.

JOURNAL PUBLICATIONS

1. Qiulin Lin, Junyan Su, and Minghua Chen. Optimal algorithms for online age-of-information optimization in energy harvesting systems. *IEEE Transactions on Networking*, 2025.
2. Yuning Jiang, Kristína Fedorová, Junyan Su, Juraj Oravec, Boris Houska, and Colin N. Jones. Fast and Lightweight: A real-time parallelizable MPC for embedded systems. *European Journal of Control*, page 101217, 2025.
3. Junyan Su, Runzhi Zhou, Qingyu Liu, Wenjie Xu, Minghua Chen, and Haibo Zeng. Minimizing Emission for Timely Heavy-Duty Truck Transportation. *IEEE Transactions on Intelligent Transportation Systems*, 2024.
4. Yuning Jiang, Junyan Su, Yuanming Shi, and Boris Houska. Distributed Optimization for Massive Connectivity. *IEEE Wireless Communications Letters*, 9(9):1412–1416, 2020.

CONFERENCE PROCEEDINGS

1. Qiulin Lin, Junyan Su, and Minhua Chen. Competitive Online Age-of-Information Optimization for Energy Harvesting Systems. In *Proceedings of IEEE INFOCOM*, 2024.
2. Junyan Su, Qiulin Lin, Minghua Chen, and Haibo Zeng. Minimizing Carbon Footprint for Timely E-Truck Transportation: Hardness and Approximation Algorithm. In *Proceedings of IEEE Conference on Decision and Control (CDC)*, 2023.
3. Junyan Su, Qiulin Lin, and Minghua Chen. Follow the Sun and Go with the Wind: Carbon Footprint Optimized Timely E-Truck Transportation. In *Proceedings of the ACM e-Energy*, 2023. **Best Paper Award**.
4. Qiulin Lin, Yanfang Mo, Junyan Su, and Minghua Chen. Competitive Online Optimization with Multiple Inventories: A Divide-and-Conquer Approach. In *Proceedings of ACM SIGMETRICS*, 2022.
5. Junyan Su, Yuning Jiang, Altuğ Bitlislioğlu, Colin N. Jones, and Boris Houska. Distributed Multi-Building Coordination for Demand Response. In *Proceedings of 21st IFAC World Congress*, 2020.
6. Ling Gao, Junyan Su, Jiadi Cui, Xiangchen Zeng, Xin Peng, and Laurent Kneip. Efficient Globally-Optimal Correspondence-Less Visual Odometry for Planar Ground Vehicles. *Proceedings of IEEE International Conference on Robotics and Automation (ICRA)*, 2020.

AWARD AND RECOGITION

- Second Place, Meituan UAV Competition, 2023.
- CDC Student Travel Grant & Workshop Support, 2023.
- Research Tuition Scholarship, City University of Hong Kong, 2023.
- Outstanding Academic Performance Award, City University of Hong Kong, 2023.
- ACM e-Energy Best Paper Award, 2023.
- HK Tech 300 & HKTSP Seed Fund, 2022.
- Outstanding Graduate, ShanghaiTech University, 2019.

SOFTWARE & SKILLS

- **Main developer** of the E2Pilot, a navigation platform for energy-efficient long-haul timely truck transportation. The system contains a website interface and a mobile app interface. Given the origin, destination, and the deadline by the user, our system will compute the energy-efficient path and speed plan, as well as intelligent driving instructions to help truckers save the energy cost while delivering the goods on time.
- **Main developer** of the ParExMPC, an open-source toolbox for real-time close-to-optimal Model Predictive Control (MPC) design providing MATLAB-based user interface and tailored C-code solver. The user could define the MPC problem with the MATLAB interface and generate the C-code that can be easily deployed resource-constrained embedded systems.
- **Main contributor** of the simulation for ALL the publication I co-authored.
- **Programming languages:** working knowledge of Julia, Python, C/C++, MATLAB.

PRESENTATIONS

- "E2Pilot: A Navigation Platform for Energy-Efficient Timely Transportation of Long-Haul Heavy-Duty Trucks", Prototypes for Humanity, Dubai, November 2024.
- "Minimizing Carbon Footprint for Timely E-Truck Transportation: Hardness and Approximation Algorithm", CDC 2023, Singpore, December 2023.
- "Follow the Sun and Go with the Wind: Carbon Footprint Optimized Timely E-Truck Transportation", ACM e-Energy 2023, Orlando, Florida, June 2023.

PATENTS

- M. Chen., J. Su, and Q. Lin, "Carbon Footprint Optimized Timely E-Truck Transportation", 8 Feb 2024, (Filed) U.S. Patent Application No. 18/436,350.