JUNYAN SU

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EDUCATION

Ph.D. in Data Science, City University of Hong Kong 2020-present
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.

SELECTED PUBLICATIONS

1. 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*, accepted for publication.

2. Qiulin Lin, Junyan Su, and Minhua Chen. Competitive Online Age-of-Information Optimization for Energy Harvesting Systems. In *Proceedings of IEEE INFOCOM*, 2024.

3. 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.

4. 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**.

5. 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.

6. Yuning Jiang, Junyan Su, Yuanming Shi, and Boris Houska. Distributed Optimization for Massive Connectivity. *IEEE Wireless Communications Letters*, 9(9):1412–1416, 2020.

7. Junyan Su, Yuning Jiang, Altuğ Bitlislioğlu, Colin N. Jones, and Boris Houska. Distributed Multi-Building Coordination for Demand Response. *IFAC-PapersOnLine*, 53(2):17113–17118, 2020.

8. 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)*, pages 2696–2702, 2020.

PAPERS UNDER REVIEW

1. Junyan Su, Qiulin Lin, and Minghua Chen. Maximizing Heavy-Duty E-Truck Decarbonization by Carbon-Optimized Timely Transportation. *Nature Communications*, sent out for review.

2. Qiulin Liu, Junyan Su, and Minghua Chen. Optimal Algorithms for Online Age-of-Information Optimization in Energy Harvesting Systems. *IEEE/ACM Transactions on Networking*, under review.

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.
Outstanding Student, ShanghaiTech University, 2016,2017,2018.

SOFTWARE & SKILLS

Main developer of the E2Pilot, a navigation platform for energy-efficient long-haul timely truck transportation.
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.
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.