Yicheng Zhang

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OVERVIEW

Dr. Yicheng Zhang is a research scientist at Institute for Infocomm Research (I2R), the Agency for Science, Technology, and Research (A*STAR). He obtained his Ph.D. degree from Nanyang Technological University (NTU). He has participated in many industrial and research projects funded by NRF, A*STAR, ATMRI, NTU, EDB, LTA, and CAAS, and has published more than 70 research papers in journals and conferences on ITS-related topics, and resource allocations. From 2015 to 2018, he participated in several research projects in Air Traffic Management Research Institute (ATMRI) in NTU, which covered research topics on modelling air traffic flow dynamics, model predictive aircraft control, and optimizing the air traffic flow management in an en-route network. From 2014 to 2018, he participated in several projects funded by Rolls-Royce NTU corporate lab and contributed to developing aircraft dynamics simulation models and aircraft energy consumption models. His current work focuses on developing smart mobility solutions for ITS testbed in Singapore. His research interests include solutions in smart cities, air traffic management, transportation electrification, and optimization methods. He received the IEEE Intelligent Transportation Systems Society (ITSS) Young Professionals Traveling Scholarship in 2019 during IEEE ITSC, and as a team member, received Singapore Public Sector Transformation Award in 2020.

WORK EXPERIENCE

Institute for Infocomm Research, A*STAR   **Singapore**
Research Scientist   *Jan 2019 - Present*

Nanyang Technological University   **Singapore**
Research Associate   *Jul 2018 - Jan 2019*

EDUCATION

Nanyang Technological University   **Singapore**
Ph. D. (Supervised by Prof. Rong Su)   *Aug 2014 - May 2019*

University of Science and Technology of China   **China**
M. Eng., Pattern Recognition (Supervised by Prof. Qiang Ling)   *Aug 2011 - Jun 2014*

Hefei University of Technology   **China**
B. Eng., Automation   *Sep 2007 - Jun 2011*

PROJECT EXPERIENCE

Current Projects

Demand Prediction and Trajectory Optimization in Terminal Maneuvering Area   *Oct 2021 - Sep 2023*
- Lead Principal Investigator (PI)
- Funded by Aviation Transformation Programme grant

Next Generation Urban Traffic Control and Management (Phase 2)   *Jun 2021 - May 2024*
- Funded by Land Transportation Authority Urban Mobility Grand Challenge (UMGC) grant

Past Projects

Next Generation Urban Traffic Control and Management (Phase 1)   *Jan 2019 - May 2021*
- Funded by Land Transportation Authority (LTA) and A*STAR research grant
- Team awarded the Public Sector Transformation Awards 2020 in the "Dare to Do" Category.

Air Traffic Management Research Institute (Phase 1)   *Apr 2015 – Jun 2018*

- Working Package 4: Distributed Model Predictive Routing and Scheduling with an Eulerian-Lagrangian Air Traffic Flow Dynamic Model
- Funded by research grant in Air Traffic Management Research Institute @ NTU

Distributed Adaptive Urban Traffic Light Control based on V2X   *Dec 2014 – Nov 2018*
- Funded by Economic Development Board and NTU research grant.
- Collaboratively investigated with NXP Semiconductors N.V.

Aerospace Integrated Electrical System (Rolls-Royce@NTU Corp Lab Phase 2)   *Aug 2017 – Dec 2018*
- Funded by National Research Foundation (NRF) Singapore under the Corp Lab @ University Scheme, Industrial Alignment Funde- Industrial Collaboration Projects (IAF-ICP).

Intelligent Power Allocation and Scheduling (Rolls-Royce@NTU Corp Lab)   *Aug 2014 – Jul 2017*
- Funded by National Research Foundation (NRF) Singapore under the Corp Lab @ University Scheme.

SKILLS & KNOWLEDGE

- **Knowledge Background**: Optimization methods, Traffic signal control, Power scheduling, Resource allocation, System modelling, Mathematical programming.
- **Programming Language**: C/C++, MATLAB, Python, Javascript.
- **Programming Tools/IDE/Operating Systems**: Visual Studio, Netbeans, Qt, MATLAB, CPLEX, Gurobi, GAMS, Anaconda, Spyder.
- **Simulation Tools**: MATLAB Simulink, PTV Vissim & Viswalk.
- **Language**: Chinese, English.

AWARDS & ACHIEVEMENTS

- Public Sector Transformation Awards 2020, MTI of Singapore, 2020. (As a team member)
- IEEE Intelligent Transportation Systems Society Young Professionals Travelling Fellow Scholarship, IEEE, 2019.
- Research Student Scholarship, MOE of Singapore, 2014-2018.
- National Scholarship for Excellent Graduate Student, MOE of China, 2013.
- Outstanding Graduate of Anhui Province, MOE of Anhui, China, 2011.
- Outstanding Student of Anhui Province, MOE of Anhui, China, 2009.

MEMBERSHIPS

- IEEE Member
- IEEE Control Systems Society Member
- IEEE Intelligent Transportation Systems Society Member

INVITED TALKS & CONFERENCE PRESENTATIONS

1. A MILP-based Traffic Signal Scheduling Solution with Consideration of Platoon Dispersion.
   Presented at the IEEE Intelligent Transportation Systems Conference. 2020.
2. A Hybrid Traffic Light Control Strategy Based on Branching Ratio Estimation and Congestion Identification
   Presented at the 58th IEEE CDC, Nice, France. 2019.
3. A Distributed Architecture for Real-time Hybrid Traffic Light Control in Urban Transportation Networks.
   Presented at the Cooperative and Automated Driving Workshop, Intelligent Transportation Systems Conference 2019, Auckland, New Zealand. 2019.
4. Modelling and Optimizations in Smart Cities.
   Presented at the Transportation Engineering Forum for Young Professionals, Tongji University, Shanghai, China. 2019.
5. Moving Towards A Smart Transportation: A Hierarchical Approach for Air Traffic Routing and Scheduling.
   Presented at the Control Science and Technology Form, East China University of Science and Technology, Shanghai, China. 2019.
6. Design of the Power Management System for Electrical Power Systems in More Electric Engine/Aircraft.
   Presented at ESARS-ITEC2018. Nottingham, United Kingdoms. 2018.

7. Fault Tolerant More Electric Engine/Aircraft Architecture with Integrated Condition-Based Control.
   Presented at ESARS-ITEC2018, Nottingham, United Kingdoms. 2018.
8. A Hierarchical Approach for Air Traffic Routing and Scheduling.
   Presented at the 56th IEEE CDC, Melbourne, Australia. 2017.
9. Distributed Flight Routing and Scheduling in Air Traffic Flow Management.
   Presented at the 55th IEEE CDC, Las Vegas, United States. 2016.
10. Distributed Power Allocation and Scheduling for Electrical Power System in More Electric Aircraft.
    Presented at the 42nd IEEE IECON, Florence, Italy. 2016.
11. Urban Road Traffic Light Real-Time Scheduling.
    Presented at the 54th IEEE CDC, Osaka, Japan. 2015.

JOURNAL PUBLICATIONS

[upcoming]

1. **Y. Zhang**, Q. Chen, Y. Zhang, and R. Su. A Closed-loop Traffic Light Scheduling Strategy Enabled by A Learning-based Parameter Estimation. *IEEE Transactions on Intelligent Transportation Systems*. 2021. (Submitted)

2. **Y. Zhang** and G. G. N. Sandamali. Airport Surface Management, Control and Optimization: From Academic Researches to Industrial Solutions. *IEEE Transactions on Intelligent Transportation Systems*. 2021. (Submitted)

3. Y. Zhang, R. Su, **Y. Zhang**, and B. Wang. Dynamic Multi-Bus Dispatching Strategy with Boarding and Holding Control for Passenger Delay Alleviation and Schedule Reliability: A Combined Dispatching-Operation System. *IEEE Transactions on Intelligent Transportation Systems*. 2021. (Submitted)

4. B. Wang, R. Su, Y. Wang, Y. Zhang, and **Y. Zhang**. Platoon control for connected automated vehicles with V2X infrastructure. *Transportation Research Part B: Methodological*. 2021. (Submitted)

   [2021]

5. **Y. Zhang**, J. Chen and Y. Yu. Distributed Power Management with Adaptive Scheduling Horizons for More Electric Aircraft. *International Journal of Electrical Power & Energy Systems*. 2021.

6. **Y. Zhang** and R. Su. An Optimization Model and Traffic Light Control Scheme for Heterogeneous Traffic Systems. *Transportation Research Part C: Emerging Technologies*. 2021.

7. G. G. N. Sandamali, R. Su, and **Y. Zhang**. A Safety-Aware Real-time Air Traffic Flow Management Model Under Demand and Capacity Uncertainties. *IEEE Transactions on Intelligent Transportation Systems*. 2021.

8. X. Jiang, J. Chen, Q. Wu, W. Zhang, **Y. Zhang**, J. Liu. Two-step Optimal Allocation of Stationary and Mobile Energy Storage Systems in Resilient Distribution Networks. *Journal of Modern Power Systems and Clean Energy*. 2021.

   [2020]

9. **Y. Zhang**, Y. Yu, R. Su and J. Chen. Power Scheduling in More Electric Aircraft based on An Optimal Adaptive Control Strategy. *IEEE Transactions on Industrial Electronics*. 2020.

10. Y. Zhang, R. Su, **Y. Zhang** and G. G. N. Sandamali. A multi-bus dispatching strategy with loading process. *IEEE Transactions on Intelligent Transportation Systems*. 2020.

11. G. G. N. Sandamali, R. Su, K. L. K. Sudheera, **Y. Zhang** and Y. Zhang. Two-stage Scalable Air Traffic Flow Management Model Under Uncertainty. *IEEE Transactions on Intelligent Transportation Systems*. 2020.

12. J. Chen, Z. Lin, J. Ren, W. Zhang, Y. Zhou and **Y. Zhang**. Distributed Multi-Scenario Optimal Sizing of Integrated Electricity and Gas System Based on ADMM. *International Journal of Electrical Power and Energy Systems*, 117, 105675, 2020.

13. J. Chen, X. Jiang, J. Li, Q. Wu, **Y. Zhang**, G. Song, and D. Lin. Multi-stage Dynamic Optimal Allocation for Battery Energy Storage System in Distribution Networks with Photovoltaic System. *International Transactions on Electrical Energy Systems*. 2020.

    [2019]

14. **Y. Zhang**, G. Ooi, S. Dasgupta, M. Husband, R. Su and C. Wen. An Energy Efficient Power Management Solution for a Fault-tolerant More Electric Engine/Aircraft. *IEEE Transactions on Industrial Electronics*, 66(7), 5663-5675, 2019.

15. **Y. Zhang**, R. Su, G. G. N. Sandamali, Y. Zhang, C. G. Cassandras and L. Xie. A Hierarchical Heuristic Approach for Solving Air Traffic Scheduling and Routing Problem with a Novel Air Traffic Model. *IEEE Transactions on Intelligent Transportation Systems*, 20(9), 3421-3434, 2019.

16. Y. Zhang, **Y. Zhang** and R. Su. Pedestrian-Safety-Aware Traffic Light Control Strategy for Urban Traffic Congestion Alleviation. *IEEE Transactions on Intelligent Transportation Systems*. Accepted, 2019.

17. G. G. N. Sandamali, R. Su and **Y. Zhang**. Flight Routing and Scheduling Under Departure and En Route Speed Uncertainty. *IEEE Transactions on Intelligent Transportation Systems*. Early Access, 2019.

18. K. Gao, **Y. Zhang**, R. Su, F. Yang, P. N. Suganthan and M. Zhou. Solving Traffic Signal Scheduling Problems in Heterogeneous Traffic Network by Using Meta-Heuristics. *IEEE Transactions on Intelligent Transportation Systems*, 20(9), 3272-3282, 2019.

19. K. Gao, Y. Zhang, **Y. Zhang**, R. Su and P. N. Suganthan. Meta-heuristics for Bi-objective Urban Traffic Light Scheduling Problems. *IEEE Transactions on Intelligent Transportation Systems*, 20(7), 2618-2629, 2019.

20. Y. Zhang, K. Gao, **Y. Zhang** and R. Su. Traffic Light Scheduling for Pedestrian-Vehicle Mixed-Flow Networks. *IEEE Transactions on Intelligent Transportation Systems*, 20(4), 1468-1483, 2019.

21. Y. Zhang, **Y. Zhang** and T.-T. Lim. UV direct photolysis of halogenated disinfection byproducts: Experimental study and QSAR modeling. *Chemosphere*, 235, 719-725, 2019.

22. A. Sadollah, K. Gao, **Y. Zhang**, Y. Zhang and R. Su. Management of traffic congestion in adaptive traffic signals using a novel classification-based approach. *Engineering Optimization*, 51(9), 1509-1528, 2019.
[2018]

23. J. Chen, W. Zhang, **Y. Zhang**, and G. Bao. Day-ahead Scheduling of Distribution Level Integrated Electricity and Natural Gas System Based on Fast-ADMM with Restart Algorithm. *IEEE Access*, 6, 17557-17569, 2018.

24. J. Chen, W. Zhang, J. Li, Y. Liu, B. Zhao and **Y. Zhang**. Optimal Sizing for Grid-tied Microgrids with Consideration of Joint Optimization of Planning and Operation. *IEEE Transactions on Sustainable Energy*, 9(1), 237-248, 2018.

25. J. Chen, J. Li, **Y. Zhang** and G. Bao. A Hierarchical Optimal Operation Strategy of Hybrid Energy Storage System in Distribution Networks with High Photovoltaic Penetration. *Energies*, 11(2), 389, 2018.

26. J. Li, J. Chen, W. Zhang, **Y. Zhang** and G. Bao. Integrated Control Strategy for Battery Energy Storage Systems in Distribution Networks with High Photovoltaic Penetration. *Transactions of China Electrotechnical Society*, 34(2), 437-446, 2018.

27. W. Zhang, J. Chen and **Y. Zhang**. Bi-level Optimal Dispatch of Microgrid Considering Different Air-conditioning Load Characteristics. *Power System Technology*, 42(5), 1424-1431, 2018.
[2017]

28. **Y. Zhang**, R. Su, Q. Li, C. G. Cassandras and L. Xie. Distributed flight routing and scheduling in air traffic flow management. *IEEE Transactions on Intelligent Transportation Systems*, 18(10), 2681-2692, 2017.

29. K. Gao, **Y. Zhang**, A. Sadollah, R. Su and A. Lentzakis. Jaya, harmony search and water cycle algorithms for solving large-scale real-life urban traffic light scheduling problem. *Swarm and Evolutionary Computation*, 37, 58-72, 2017.
[2016]

30. Q. Ling, L. Xu, J. Yan, **Y. Zhang** and F. Li. A feedback-based adaptive data migration method for hybrid storage VOD caching systems. *Multimedia Tools and Applications*, 75, 165-180, 2016.

31. K. Gao, **Y. Zhang**, A. Sadollah and R. Su. Optimizing urban traffic light scheduling problem using harmony search with ensemble of local search. *Applied Soft Computing*, 48, 359-372, 2016.
[before 2016]

32. Q. Ling, J. Yan, F. Li and **Y. Zhang**. A background modeling and foreground segmentation approach based on the feedback of moving objects in traffic surveillance systems. *Neurocomputing*, 133, 32-45, 2014.

33. Q. Ling, L. Xu, J. Yan and **Y. Zhang**. An adaptive caching algorithm suitable for time-varying user accesses in VOD systems. *Multimedia Tools and Applications*, 1-21, 2014.

34. J. Yan, Q. Ling, **Y. Zhang**, F. Li and F. Zhao. An adaptive bicycle detection algorithm based on Multi-Gaussian models. *Journal of Computational Information Systems*, 9(24), 10075-10083, 2013.

35. Q. Ling, L. Xu, **Y. Zhang** and J. Yan. Estimation of the Concurrent Capacity of a Streaming Media Server Based on User Behavior Analysis. *British Journal of Mathematics & Computer Science*, 3(4), 811-821, 2013.

36. Q. Ling, **Y. Zhang**, J. Yan, L. Xu, F. Zhao and S. Hao. Construction and Application of Users' Behavior Model in the Video on Demand System. *Journal of Chinese Computer Systems*, 34(3), 548-552, 2013.

CONFERENCE PUBLICATIONS

[2021]

1. R. Luo, **Y. Zhang**, Y. Zhou, H. Chen, L. Yang, J. Yang, and R. Su. Deep Learning Approach for Long-Term Prediction of Electric Vehicle (EV) Charging Station Availability. *IEEE Intelligent Transportation Systems Conference*. 2021.

2. Z. Du, J. Chen, and **Y. Zhang**. Multi-objective Routing Optimization for Electric Power Communication

Network Considering Business Importance. The 3rd Asia Energy and Electrical Engineering Symposium (AEEES 2021). 2021.

[2020]

3. **Y. Zhang** and R. Su. A MILP-based Traffic Signal Scheduling Solution with Consideration of Platoon Dispersion. *IEEE Intelligent Transportation Systems Conference*. 2020.

4. Y. Zhang, R. Su and **Y. Zhang**. A dynamic optimization model for bus schedule design to mitigate the passenger waiting time by dispatching the bus platoon. *2020 American Control Conference*. 2020.

5. S. Shi, J. Chen and **Y. Zhang**. An Optimal Operation Strategy for Micro-Energy Grid based on the C&CG Algorithm. *IEEE Student Conference on Electric Machines and System*. 2020.

[2019]

6. **Y. Zhang**, R. Su, Q. Chen, Y. Zhang and C. Sun. A Hybrid Traffic Light Control Strategy Based on Branching Ratio Estimation and Congestion Identification. *58th IEEE Conference on Decision and Control*. 2019.

7. **Y. Zhang**. A Distributed Architecture for Real-time Hybrid Traffic Light Control in Urban Transportation Networks. *IEEE Intelligent Transportation Systems Conference (IEEE ITSS Young Professionals Travelling Fellowship)*. 2019.

8. Y. Wang, **Y. Zhang**, H. Ng, B. Zhao and W. Ng. Dynamic Origin-Destination Estimation Framework with Iterative Traffic Signal Tuning for Microscopic Traffic Simulation. *IEEE Intelligent Transportation Systems Conference*. 2019.

9. Y. Zhang, **Y. Zhang**, and R. Su. Optimization of vehicle delay and drivers' unhappiness at a signalized network: a multi-objective approach. *15th IEEE International Conference on Control & Automation*. 2019.

10. G. G. N. Sandamali, R. Su and **Y. Zhang**. Short-term En route Air Traffic Flow Management Under Departure and Wind Uncertainty with a Heuristic and Greedy Solution Approach. *2019 American Control Conference*. 2019.

11. H. Zhang, J. Chen and **Y. Zhang**. Optimal Planning of Integrated Electricity and Natural Gas System Based on C&CG Algorithm. *IEEE PES Asia-Pacific Power and Energy Engineering Conference*. 2019.

12. X. Wang, J. Chen, G. Song and **Y. Zhang**. Economic Operation for Microgrid Based on Interval Planning Method with Consideration of Electric Vehicle. *IEEE PES Asia-Pacific Power and Energy Engineering Conference*. 2019.

13. Z. Lin, J. Chen, J. Ren, G. Song and **Y. Zhang**. Distributed Optimal Operation for Distribution Networks with Multi-microgrid Based on ADMM. *IEEE PES GTD Grand International Conference & Exposition Asia*. 2019.

[2018]

14. **Y. Zhang**, G. Ooi, S. Dasgupta, M. Husband, R. Su and C. Wen. Design of the Power Management System for Electrical Power Systems in More Electric Engine/Aircraft. *International Conference on Electrical Systems for Aircraft, Railway, Ship Propulsion and Road Vehicles & International Transportation Electrification Conference (ESARS-ITEC)*. 2018.

15. G. Ooi, **Y. Zhang**, S. Dasgupta, M. Husband, D. Wu and C. Wen. Fault Tolerant More Electric Engine/Aircraft Architecture with Integrated Condition-Based Control. *International Conference on Electrical Systems for Aircraft, Railway, Ship Propulsion and Road Vehicles & International Transportation Electrification Conference (ESARS-ITEC)*. 2018.

16. J. Li, J. Chen, W. Zhang and **Y. Zhang**. Bi-level Dispatching Strategy for HESS in Distribution Networks with High PV Penetration Considering Voltage Regulation and Price Arbitrage. *IEEE PES General Meeting*. 2018.

17. W. Zhang, J. Chen, J. Li and **Y. Zhang**. Multi-time Scale Scheduling of Integrated Electricity and Natural Gas System Considering the Dynamic Flow of Natural Gas. *IEEE PES International Conference on Innovative Smart Grid Technologies*. 2018.

[2017]

18. **Y. Zhang**, R. Su, N. Sandamali and C. Cassandras. A Hierarchical Approach for Air Traffic Routing and Scheduling. *The 56th IEEE Conference on Decision and Control (CDC' 17)*. 2017.

19. **Y. Zhang**, R. Su and C. Sun. Modelling and Traffic Signal Control of a Heterogeneous Traffic Network with Signalized and Non-Signalized Intersections. *1st IEEE Conference on Control Technology and Applications (CCTA'17)*. 2017.

20. Y. Zhang, R. Su and **Y. Zhang**. A macroscopic propagation model for bidirectional pedestrian flows on signalized crosswalks. *56th IEEE Conference on Decision and Control*. 2017.

21. Y. Zhang, R. Su, K. Gao and **Y. Zhang**. Traffic Light Scheduling for Pedestrians and Vehicles. *1st IEEE Conference on Control Technology and Applications*. 2017.

22. K. Gao, **Y. Zhang**, Y. Zhang and R. Su. A Meta-heuristic with Ensemble of Local Search Operators for Urban

Traffic Light Optimization. *The 2017 IEEE Symposium Series on Computational Intelligence*. 2017.

23. N. Sandamali, R. Su, **Y. Zhang** and Q. Li. Flight Routing and Scheduling with Departure Uncertainties in Air Traffic Flow Management. *13th IEEE International Conference on Control & Automation*. 2017.

24. K. Gao, **Y. Zhang**, A. Sadollah and R. Su. Improved artificial bee colony algorithm for solving urban traffic light scheduling problem. *IEEE Congress on Evolutionary Computation*. 2017.

25. W. Zhang, J. Chen, H. Zhang, **Y. Zhang** and T. Li. Optimal Day-ahead Scheduling of Electricity and Natural Gas System at the Distribution Level Considering Uncertainty of Natural Gas Load. *1st IEEE Conference on Energy Internet and Energy System Integration*. 2017.

[2016]

26. **Y. Zhang**, R. Su, Q. Li, C. G. Cassandras and L. Xie, Distributed Flight Routing and Scheduling in Air Traffic Flow Management. *The 55th IEEE Conference on Decision and Control (CDC'16)*. 2016.

27. **Y. Zhang**, R. Su, C. Wen, M. Y. Lee and C. Gajanayake. Distributed Power Allocation and Scheduling for Electrical Power System in More Electric Aircraft. *42nd Annual Conference of IEEE Industrial Electronics Society*. 2016.

28. **Y. Zhang**, Q. Li and R. Su. Sector-based Distributed Scheduling Strategy in Air Traffic Flow Management. *14th IFAC Symposium on Control in Transportation Systems*. 2016.

29. K. Gao, **Y. Zhang**, A. Sadollah and R. Su. Java Algorithm for Solving Urban Traffic Signal Control Problem. *14th International Conference on Control, Automation, Robotics and Vision*. 2016.

30. K. Gao, A. Sadollah, **Y. Zhang** and R. Su. Discrete Jaya Algorithm for Flexible Job Shop Scheduling Problem with New Job Insertion. *14th International Conference on Control, Automation, Robotics and Vision*. 2016.

31. Q. Xu, P. Wang, **Y. Zhang**, C. Wen and J. Xiao. A decentralized control strategy for economic operation of autonomous AC microgrids. *42nd Annual Conference of IEEE Industrial Electronics Society*. 2016.

32. Q. Li, **Y. Zhang** and R. Su. A Flow-based Flight Scheduler for En-route Air Traffic Management. *14th IFAC Symposium on Control in Transportation Systems*. 2016.

33. K. Gao, **Y. Zhang**, R. Su and A. Lentzakis. Discrete Harmony Search Algorithm for Solving Urban Traffic Light Scheduling Problem. *American Control Conference*. 2016.

[2015]

34. **Y. Zhang**, R. Su and K. Gao. Urban Road Traffic Light Real-Time Scheduling. *The 54th IEEE Conference on Decision and Control (CDC'15)*. 2015.

35. **Y. Zhang**, Y. Su and R. Su. Real-Time Scheduling in Urban Road Traffic Light Control. *14th Asian Pacific Intelligent Transportation System Conference*. 2015.

36. A. Barzegar, R. Su, C. Wen, L. Rajabpour, **Y. Zhang**, A. Gupta, C. Gajanayake and M. Y. Lee. Intelligent Power Allocation and Load Management of More Electric Aircraft. *IEEE Conference on Power Electronics and Drive Systems*. 2015.

[before 2015]

37. J. Yan, Q. Ling, **Y. Zhang**, F. Li and F. Zhao. A Novel Occlusion-Adaptive Multi-Object Tracking Method for Road Surveillance Applications. *32nd IEEE Chinese Control Conference*, 3547-3551, 2013.

38. **Y. Zhang**, J. Yan, Q. Ling, F. Li and J. Zhu. Moving cast shadow detection based on regional growth. *32nd IEEE Chinese Control Conference*, 3791-3794, 2013.

THESES

1. **Y. Zhang**. Solving Large-Scale Resource Allocation Problems - Formulations, Solutions and Case Studies. Ph.D. Thesis. *Nanyang Technological University*. 2019.

2. **Y. Zhang**. Research on Algorithms to Recognize Moving Objects in Low-resolution Traffic Videos M. Eng. Thesis. *University of Science and Technology of China*. 2014.

TECHNICAL DISCLOSURES & PATENTS

Technical Disclosures

1. R. Su and **Y. Zhang**. A Hybrid Traffic Light Control Strategy with Congestion Identification. NTU Ref 2021-065. 2021.

2. **Y. Zhang** and J. Shankar. An Adaptive Bus Priority Scheme for Traffic Light Control. I2R Technical Disclosure. 2020.

3. **Y. Zhang**, J. Shankar and C. W. Ang. A Traffic Signal Control Scheme with Consideration of Pedestrian

Demands. I2R Technical Disclosure. 2020.

4. R. Su and **Y. Zhang**. A Software Tool for En-route Air Traffic Flow Management in Large Air Traffic Networks. TD-183-17, July 26, 2017.

Patents ....

1. Q. Ling, J. Yan, **Y. Zhang**, F. Li and L. Xu. An image processing method for segmentation of moving objects based on the feedback. Publication Number: CN103514609B, *China National Invention Patent*, 2014.
2. Q. Ling, **Y. Zhang**, L. Xu, J. Yan and F. Li. Bicycle Detection Algorithm base on Multi-feature and Multi-frame Fusion, Publication Number: CN103310206A, *China National Invention Patent*, 2013.
3. Q. Ling, J. Yan, **Y. Zhang**, F. Li and L. Xu. Bicycle Detection Method based on Multiple Gaussian Models. Publication Number: CN103310207A, *China National Invention Patent*, 2013.

VOLUNTEER WORK

o **Journal Reviewer**: Applied Energy, Applied Soft Computing, Automatica, Electrical Power Components and Systems, IEEE Access, IEEE Transactions on Automatic Control, IEEE Transactions on Automation Science and Engineering, IEEE Transactions on Industrial Electronics, IEEE Transactions on Intelligent Transportation Systems, IEEE Transactions on Knowledge and Data Engineering, IEEE Transactions on Neural Networks and Learning Systems, IEEE Transactions on Transportation Electrification, IET Intelligent Transport Systems, Journal of Advanced Transportation, Journal of Air Transport Management, Journal of Control and Decision, Journal of Traffic and Transportation Engineering, Networks and Spatial Economics, Optimization Letters, Swarm and Evolutionary Computation, · · ·

o **Conference Reviewer**: American Control Conference (ACC), Chinese Control Conference (CCC), IEEE Conference on Decision and Control (CDC), IEEE Conference on Automation, Science and Engineering (CASE), IEEE Chinese Conference on Decision Control (CCDC), IEEE International Conference on Control and Automation (ICCA), IEEE Power and Energy Society General Meeting (PES-GM), IEEE Annual Conference on Industrial Electronics Society (IECON), IEEE Intelligent Transportation Systems Conference (ITSC), International Conference on Automation, Robotics and Computer Vision (ICARCV), World Congress on Intelligent Control and Automation (WCICA), · · ·