James Jian Qiao **Yu**

Assistant Professor · Southern University of Science and Technology

Rm. 519, South Building, College of Engineering, Southern University of Science and Technology, 1088 Xueyuan Ave., Shenzhen, China

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Research Interest

Deep learning in smart cities, big data and internet of things, evolutionary computation and optimization.

Education

Doctor of Philosophy *Aug. 2015*

Department of Electrical and Electronic Engineering, The University of Hong Kong

- Thesis: A Social Spider Inspired Metaheuristic for Global Numerical Optimization and its Applications
- Advisor: Prof. Victor On Kwok Li

Bachelor of Engineering (Hons.) *Aug. 2011*

Department of Electrical and Electronic Engineering, The University of Hong Kong

Professional Experience

Assistant Professor *Jan. 2019 - Present*

Department of Computer Science and Engineering, Southern University of Science and Technology, China

Honorary Assistant Professor *Mar. 2017 - Present*

Department of Electrical and Electronic Engineering, The University of Hong Kong

Post-doctoral Fellow *Sept. 2015 - Dec. 2018*

Department of Electrical and Electronic Engineering, The University of Hong Kong

- Advisor: Prof. David John Hill

Visiting Scholar *Jun. 2013 - Jul. 2013*

Departamento de Computación, Centro de Investigación y de Estudios Avanzados del Instituto Politécnico Nacional, Mexico

- Host: Prof. Carlos Artemio Coello Coello, Prof. Wen Yu

Research Assistant *Nov. 2009 - Aug. 2010*

Department of Electrical and Electronic Engineering, The University of Hong Kong

- Host: Prof. Victor On Kwok Li

Research Grant

Stable Support Plan Program of Shenzhen Natural Science Fund / 深圳市高等院校稳定支持计划 *Jan. 2021 - Dec. 2022*

Research on key methods for data prediction in intelligent transportation systems of large-scale smart cities / 面向大规模智慧城市的智能交通系统数据预测关键方法研究

- Grant number: 20200925155105002
- Awarded amount: RMB 500K
- Role: Principal Investigator

General Program of Guangdong Basic and Applied Basic Research Foundation / 广东省自然科学基金面上项目（基础与应用基础研究基金） *Oct. 2019 - Sept. 2022*

Research on traffic speed estimation and prediction in city-wide transportation networks driven by graph deep learning / 图网络深度学习驱动的城市交通网车速监测及预测算法研究

- Grant number: 2019A1515011032
- Awarded amount: RMB 100K
- Role: Principal Investigator

National Key Research and Development Program of China / 国家重点研发计划 *Jul. 2017 - Dec. 2020*

Research on key technology, core equipment and engineering demonstration of distributed renewable AC and DC energy generation / 交直流混合的分布式可再生能源关键技术、核心装备和工程示范研究

- Grant number: 2017YFB0903200
- Awarded amount: RMB 62.56M
- Role: Co-Investigator and HKU Team Coordinator

National Natural Science Foundation of China (Young Scientists) / 国家自然科学基金青年基金 *Jan. 2018 - Dec. 2020*

Fundamental Research on Construction and Operation Strategies of Converged Network for Smart Grids and Electric Vehicles / 智能电网与电动车融合网络构建及运营策略的基础性研究

- Grant number: 51707170
- Awarded amount: RMB 200K
- Role: Co-Investigator

Teaching Experience

Digital Logic (H) *M'21*

Department of Computer Science and Engineering, Southern University of Science and Technology

- Role: Course Instructor and Designer
- Website (M'21): `https://jamesyu.me/courses/CS211`

Digital Logic *S'21,S'20,S'19*

Department of Computer Science and Engineering, Southern University of Science and Technology

- Role: Course Instructor and Designer
- Website (S'21): `https://jamesyu.me/courses/CS207`

Introduction to Computer Programming A *F'21,F'20,F'19*

Department of Computer Science and Engineering, Southern University of Science and Technology

- Role: Course Instructor
- Website (F'21): `https://jamesyu.me/courses/CS102A`

Introduction to Computer Programming A (H) *F'21,F'20*

Department of Computer Science and Engineering, Southern University of Science and Technology

- Role: Course Instructor and Designer
- Website (F'21): `https://jamesyu.me/courses/CS107`

Embedded System *F'16,F'17*

Department of Electrical and Electronic Engineering, The University of Hong Kong

- Role: Guest Lecturer

Engineering Management and Society *F'14*

Department of Electrical and Electronic Engineering, The University of Hong Kong

- Role: Guest Lecturer

Sustainability and Climate Change *S'14*

Department of Electrical and Electronic Engineering, The University of Hong Kong

- Role: Teaching Assistant

Communications Engineering *S'12*

Department of Electrical and Electronic Engineering, The University of Hong Kong

- Role: Teaching Assistant

Professional Activities

Journal Editorship

Leading Editor, IET Smart Cities Special Issue on Smart Transport for Smart Cities *2020*

Associate Editor, IET Smart Cities *2019-*

Program Organization

IEEE International Joint Conference on Neural Networks *2021*

Program Committee Member

AAAI Conference on Artificial Intelligence *2021*
International Joint Conference on Artificial Intelligence *2020,2021*
IEEE International Conference on Vehicular Electronics and Safety *2018*
IEEE Intelligent Vehicles Symposium *2018*
International Conference on Intelligent Systems Design and Applications *2017*
IEEE International Smart Cities Conference *2017*
IEEE International Conference on Smart Grid Communications *2016,2017*
IEEE Computational Intelligence Society Pre-College Activities Subcommittee *2015*
IEEE Computational Intelligence Society Young Professionals Subcommittee *2015*
IEEE World Congress on Computational Intelligence *2014,2016*
IEEE Computational Intelligence Society Student Activities Subcommittee *2014*
World Congress on Nature and Biologically Inspired Computing *2013*
IEEE Computational Intelligence Society Webinars Subcommittee *2013,2014*

Reviewer

IEEE Transactions on Intelligent Transportation Systems
IEEE Transactions on Industrial Informatics
IEEE Transactions on Power Systems
IEEE Transactions on Smart Grid
IEEE Transactions on Neural Networks and Learning Systems
IEEE Transactions on Mobile Computing
IEEE Transactions on Wireless Communications
IEEE Transactions on Systems, Man, and Cybernetics: Systems
IEEE Transactions on Cybernetics
IEEE Internet of Things Journal
plus 30+ other prestigious journals and top conferences

Selected Consulting Affiliations

GWGrid Inc., Zhuhai, China
Fano Labs, Hong Kong

Journal Publications

(*) Corresponding author

[1] A Communication-Efficient Federated Learning Scheme for IoT-Based Traffic Forecasting
Chenhan Zhang, Lei Cui, Shui Yu, and **James J.Q. Yu***
IEEE Internet of Things Journal, in press.

[2] Towards Crowdsourced Transportation Mode Identification: A Semi-supervised Federated Learning Approach
Chenhan Zhang, Yuanshao Zhu, Christos Markos, Shui Yu, and **James J.Q. Yu***
IEEE Internet of Things Journal, in press.

[3] Towards Crowdsourced Transportation Mode Identification: A Semi-supervised Federated Learning Approach
Chenhan Zhang, Yuanshao Zhu, Christos Markos, Shui Yu, and **James J.Q. Yu***
IEEE Internet of Things Journal, in press.

[4] Resource-constrained Federated Edge Learning with Heterogeneous Data: Formulation and Analysis
Yi Liu', Yuanshao Zhu', and **James J.Q. Yu***
IEEE Transactions on Network Science and Engineering, in press, DOI: 10.1109/TNSE.2021.3126021.

[5] Citywide Estimation of Travel Time Distributions with Bayesian Deep Graph Learning
James J.Q. Yu
IEEE Transactions on Knowledge and Data Engineering, in press, DOI: 10.1109/TKDE.2021.3117986.

[6] Electric Vehicle Dynamic Wireless Charging System: Optimal Placement and Vehicle-to-Grid Scheduling

Shiyao Zhang and **James J.Q. Yu***

IEEE Internet of Things Journal, in press, DOI: 10.1109/JIOT.2021.3109956.

[7] Semi-supervised Federated Learning for Travel Mode Identification from GPS Trajectories

Yuanshao Zhu, Yi Liu, **James J.Q. Yu***, and Xingliang Yuan

IEEE Transactions on Intelligent Transportation Systems, in press, DOI: 10.1109/TITS.2021.3092015.

[8] Bayesian Deep Learning for Dynamic Power System State Prediction Considering Renewable Energy Uncertainty

Shiyao Zhang and **James J.Q. Yu***

Journal of Modern Power Systems and Clean Energy, in press, DOI: 10.35833/MPCE.2020.000939.

[9] Long-Term Urban Traffic Speed Prediction With Deep Learning on Graphs

James J.Q. Yu, Christos Markos, and Shiyao Zhang*

IEEE Transactions on Intelligent Transportation Systems, in press, DOI: 10.1109/TITS.2021.3069234.

[10] Long-term Origin-Destination Demand Prediction with Graph Deep Learning

Xiexin Zou, Shiyao Zhang, Chenhan Zhang, **James J.Q. Yu***, and Edward Chung

IEEE Transactions on Big Data, in press, DOI: 10.1109/TBDATA.2021.3063553.

[11] FASTGNN: A Topological Information Protected Federated Learning Approach For Traffic Speed Forecasting

Chenhan Zhang, Shuyu Zhang, **James J.Q. Yu***, and Shui Yu

IEEE Transactions on Industrial Informatics, Volumn 17, Issue 12, Dec. 2021, Pages 8464-8474, DOI: 10.1109/TII.2021.3055283.

[12] Sybil Attack Identification for Crowdsourced Navigation: A Self-supervised Deep Learning Approach

James J.Q. Yu

IEEE Transactions on Intelligent Transportation Systems, Volume 22, Issue 7, Jul. 2021, Pages 4622-4634, DOI: 10.1109/TITS.2020.3036085.

[13] Complicating the Social Networks for Better Storytelling: An Empirical Study of Chinese Historical Text and Novel

Chenhan Zhang, Qingpeng Zhang, Shui Yu, **James J.Q. Yu***, and Xiaozhuang Song

IEEE Transactions on Computational Social Systems, Volume 8, Issue 3, Jun. 2021, Pages 754-767, DOI: 10.1109/TCSS.2021.3061702.

[14] Travel Mode Identification with GPS Trajectories using Wavelet Transform and Deep Learning

James J.Q. Yu

IEEE Transactions on Intelligent Transportation Systems, Volume 22, Issue 2, Feb. 2021, Pages 1093-1103, DOI: 10.1109/TITS.2019.2962741.

[15] Citywide Traffic Speed Prediction: A Geometric Deep Learning Approach

James J.Q. Yu

Knowledge-Based Systems, Volume 212, Jan. 2021, Pages 106592, DOI: 10.1016/j.knosys.2020.106592.

[16] Privacy-preserving Traffic Flow Prediction: A Federated Learning Approach

Yi Liu, **James J.Q. Yu***, Jiawen Kang, Dusit Niyato, and Shuyu Zhang

IEEE Internet of Things Journal, Volume 7, Issue 8, Aug. 2020, Pages 7751-7763, DOI: 10.1109/JIOT.2020.2991401.

[17] A Novel Interpolation-SVT Approach for Recovering Missing Low-Rank Air Quality Data

Yangwen Yu, **James J.Q. Yu***, Victor O.K. Li, and Jacqueline C.K. Lam

IEEE Access, Volume 8, May 2020, Pages 74291-74305, DOI: 10.1109/ACCESS.2020.2988684.

[18] Semi-supervised Deep Ensemble Learning for Travel Mode Identification

James J.Q. Yu

Transportation Research Part C: Emerging Technologies, Volume 112, Mar. 2020, Pages 120-135, DOI: 10.1016/j.trc.2020.01.003.

[19] Spatial-Temporal Graph Attention Networks: A Deep Learning Approach for Traffic Forecasting

Chenhan Zhang, **James J.Q. Yu***, and Yi Liu

IEEE Access, Volume 7, Nov. 2019, Pages 166246-166256, DOI: 10.1109/ACCESS.2019.2953888.

[20] Synchrophasor Recovery and Prediction: A Graph-based Deep Learning Approach

James J.Q. Yu, David J. Hill, Victor O.K. Li, and Yunhe Hou

IEEE Internet of Things Journal, Volume 6, Issue 5, Oct. 2019, Pages 7348-7359, DOI: 10.1109/JIOT.2019.2899395.

[21] Real-Time Traffic Speed Estimation with Graph Convolutional Generative Autoencoder

James J.Q. Yu and Jiatao Gu

IEEE Transactions on Intelligent Transportation Systems, Volume 20, Issue 10, Oct. 2019, Pages 3940-3951, DOI: 10.1109/TITS.2019.2910560.

[22] Online Vehicle Routing with Neural Combinatorial Optimization and Deep Reinforcement Learning

James J.Q. Yu, Wen Yu, and Jiatao Gu

IEEE Transactions on Intelligent Transportation Systems, Volume 20, Issue 10, Oct. 2019, Pages 3806-3817, DOI: 10.1109/TITS.2019.2909109.

[23] Multi-objective design optimization of combined cooling, heating and power system for cruise ship application

Yamin Yan, Haoran Zhang*, Yin Long, Yufei Wang, Yongtu Liang, Xuan Song, and **James J.Q. Yu**

Journal of Cleaner Production, Volume 233, Oct. 2019, Pages 264-279, DOI: 10.1016/j.jclepro.2019.06.047.

[24] Delay Aware Power System Synchrophasor Recovery and Prediction Framework

James J.Q. Yu, Albert Y.S. Lam, David J. Hill, Yunhe Hou, and Victor O.K. Li

IEEE Transactions on Smart Grid, Volume 10, Issue 4, Jul. 2019, Pages 3732-3742, DOI: 10.1109/TSG.2018.2834543.

[25] Core-Selecting Auctions for Autonomous Vehicle Public Transportation System

James J.Q. Yu and Albert Y.S. Lam

IEEE Systems Journal, Volume 13, Issue 2, Jun. 2019, Pages 2046-2056, DOI: 10.1109/JSYST.2018.2864589.

[26] Two-Stage Request Scheduling for Autonomous Vehicle Logistic System

James J.Q. Yu

IEEE Transactions on Intelligent Transportation Systems, Volume 20, Issue 5, May 2019, Pages 1917-1929, DOI: 10.1109/TITS.2018.2849091.

[27] Intelligent Fault Detection Scheme for Microgrids with Wavelet-based Deep Neural Networks

James J.Q. Yu, Yunhe Hou, Albert Y.S. Lam, and Victor O.K. Li

IEEE Transactions on Smart Grid, Volume 10, Issue 2, Mar. 2019, Pages 1694-1703, DOI: 10.1109/TSG.2017.2776310.

[28] Delay Aware Transient Stability Assessment with Synchrophasor Recovery and Prediction Framework

James J.Q. Yu, David J. Hill, and Albert Y.S. Lam

Neurocomputing, Volume 322, Dec. 2018, Pages 187-194, DOI: 10.1016/j.neucom.2018.09.059.

[29] Coordinated Autonomous Vehicle Parking for Vehicle-to-Grid Services: Formulation and Distributed Algorithm

Albert Y.S. Lam, **James J.Q. Yu**, Yunhe Hou, and Victor O.K. Li

IEEE Transactions on Smart Grid, Volume 9, Issue 5, Sept. 2018, Pages 4356-4366, DOI: 10.1109/TSG.2017.2655299.

[30] Online False Data Injection Attack Detection with Wavelet Transform and Deep Neural Networks

James J.Q. Yu, Yunhe Hou, and Victor O.K. Li

IEEE Transactions on Industrial Informatics, Volume 14, Issue 7, Jul. 2018, Pages 3271-3280, DOI: 10.1109/TII.2018.2825243.

[31] Autonomous Vehicle Logistic System: Joint Routing and Charging Strategy

James J.Q. Yu and Albert Y.S. Lam*

IEEE Transactions on Intelligent Transportation Systems, Volume 19, Issue 7, Jul. 2018, Pages 2175-2187, DOI: 10.1109/TITS.2017.2766682.

[32] Double Auction-based Pricing Mechanism for Autonomous Vehicle Public Transportation System

James J.Q. Yu, Albert Y.S. Lam, and Zhiyi Lu

IEEE Transactions on Intelligent Vehicles, Volume 3, Issue 2, Jun. 2018, Pages 151-162, DOI: 10.1109/TIV.2018.2804161.

[33] Intelligent Time-Adaptive Transient Stability Assessment System

James J.Q. Yu, David J. Hill, Albert Y.S. Lam, Jiatao Gu, and Victor O.K. Li

IEEE Transactions on Power Systems, Volume 33, Issue 1, Jan. 2018, Pages 1049-1058, DOI: 10.1109/TPWRS.2017.2707501.

[34] A Unified Framework for Wide Area Measurement System Planning

James J.Q. Yu, Albert Y.S. Lam, David J. Hill, and Victor O.K. Li

International Journal of Electrical Power and Energy Systems, Volume 96, Mar. 2018, Pages 43-51, DOI: 10.1016/j.ijepes.2017.09.032.

[35] Delay Aware Intelligent Transient Stability Assessment System

James J.Q. Yu, Albert Y.S. Lam, David J. Hill, and Victor O.K. Li

IEEE Access, Volume 5, Aug. 2017, Pages 17230-17239, DOI: 10.1109/ACCESS.2017.2746093.

[36] A Social Spider Algorithm for Solving the Non-convex Economic Load Dispatch Problem

James J.Q. Yu and Victor O.K. Li

Neurocomputing, Volume 171, Jan. 2016, Pages 955-965, DOI: 10.1016/j.neucom.2015.07.037.

[37] A Social Spider Algorithm for Global Optimization

James J.Q. Yu and Victor O.K. Li

Applied Soft Computing, Volume 30, May 2015, Pages 614-627, DOI: 10.1016/j.asoc.2015.02.014.

[38] Power-Controlled Cognitive Radio Spectrum Allocation with Chemical Reaction Optimization

Albert Y.S. Lam, Victor O.K. Li, and **James J.Q. Yu**

IEEE Transactions on Wireless Communications, Volume 12, Issue 7, Jul. 2013, Pages 3180-3190, DOI: 10.1109/TWC.2013.061713.120255.

[39] Real-Coded Chemical Reaction Optimization

Albert Y.S. Lam, Victor O.K. Li, and **James J.Q. Yu**

IEEE Transactions on Evolutionary Computation, Volume 16, Issue 3, Jun. 2012, Pages 339-353, DOI: 10.1109/TEVC.2011.2161091.

Books and Chapters

[1] Optimal scheduling with vehicle-to-grid ancillary services

Junhao Lin, **James J.Q. Yu**, Ka-Cheong Leung, and Victor O.K. Li

Energy Systems for Electric and Hybrid Vehicles, IET 2016.

Conference Publications

(*) Corresponding author

[1] Second-order Time Delay Reservoir Computing for Nonlinear Time Series Problems

Xinming Shi, Jiashi Gao, Leandro L. Minku, James J. Q. Yu and Xin Yao

Proc. IEEE Symposium Series on Computational Intelligence, Orlando, FL, US, Dec. 2021.

[2] Attn-CommNet: Coordinated Traffic Lights Control on Large-scale Network Level

Jiashi Gao, Xinming Shi, and **James J.Q. Yu***

Proc. IEEE International Conference on Tools with Artificial Intelligence, Washington, D.C., US, Nov. 2021.

[3] Improving Transportation Mode Identification with Limited GPS Trajectories

Yuanshao Zhu, Christos Markos, and **James J.Q. Yu***

Proc. IEEE International Conference on Tools with Artificial Intelligence, Washington, D.C., US, Nov. 2021.

[4] TINet: Multi-dimensional Traffic Data Imputation via Transformer Network

Xiaozhuang Song, Yongchao Ye, and **James J.Q. Yu***

Proc. IEEE International Conference on Artificial Neural Networks, Bratislava, Slovakia, Sept. 2021.

[5] Spatial-Temporal Traffic Data Imputation via Graph Attention Convolutional Network

Yongchao Ye, Shiyao Zhang, and **James J.Q. Yu***

Proc. IEEE International Conference on Artificial Neural Networks, Bratislava, Slovakia, Sept. 2021.

[6] Traffic Data Imputation with Ensemble Convolutional Autoencoder

Yongchao Ye, Shuyu Zhang, and **James J.Q. Yu***

Proc. IEEE Intelligent Transportation Systems Conference, Indianapolis, IN, US, Sept. 2021.

[7] Learn Travel Time Distribution with Graph Deep Learning and Generative Adversarial Network

Xiaozhuang Song, Chenhan Zhang, and **James J.Q. Yu***

Proc. IEEE Intelligent Transportation Systems Conference, Indianapolis, IN, US, Sept. 2021.

[8] Origin-Destination Matrix Prediction via Hexagon-based Generated Graph

Yixuan Yang, Shiyao Zhang, and **James J.Q. Yu***

Proc. IEEE Intelligent Transportation Systems Conference, Indianapolis, IN, US, Sept. 2021.

[9] Transfer Learning in Traffic Prediction with Graph Neural Networks

Yunjie Huang, Xiaozhuang Song, Shiyao Zhang, and **James J.Q. Yu***

Proc. IEEE Intelligent Transportation Systems Conference, Indianapolis, IN, US, Sept. 2021.

[10] FedOVA: One-vs-All Training Method for Federated Learning with Non-IID Data

Yuanshao Zhu, Christos Markos, Ruihui Zhao, Yefeng Zheng, and **James J.Q. Yu***

Proc. International Joint Conference on Neural Networks, Shenzhen, China, Jul. 2021.

[11] A Bayesian Learning Network for Traffic Speed Forecasting with Uncertainty Quantification

Ying Wu and **James J.Q. Yu***

Proc. International Joint Conference on Neural Networks, Shenzhen, China, Jul. 2021.

[12] Capturing Uncertainty in Unsupervised GPS Trajectory Segmentation Using Bayesian Deep Learning

Christos Markos, **James J.Q. Yu***, and Richard Y.D. Xu

Proc. AAAI Conference on Artificial Intelligence, Vancouver, Canada, Feb. 2021.

[13] Robust Federated Learning Approach for Travel Mode Identification from Non-IID GPS Trajectories

Yuanshao Zhu, Shuyu Zhang, Yi Liu, Dusit Niyato, and **James J.Q. Yu***

Proc. IEEE International Conference on Parallel and Distributed Systems, Hong Kong, Dec. 2020, DOI: 10.1109/ICPADS51040.2020.00081.

[14] An Enhanced Motif Graph Clustering-Based Deep Learning Approach for Traffic Forecasting

Chenhan Zhang, Shuyu Zhang, **James J.Q. Yu***, and Shui Yu

Proc. IEEE Global Communications Conference, Taipei, Dec. 2020, DOI: 10.1109/GLOBECOM42002.2020.9322104.

[15] Unsupervised Deep Learning for GPS-Based Transportation Mode Identification

Christos Markos and **James J.Q. Yu***

Proc. IEEE Intelligent Transportation Systems Conference, Rhodes, Greece, Sept. 2020, Pages 1718-1723, DOI: 10.1109/ITSC45102.2020.9294673.

[16] Reconstruction of Missing Trajectory Data: A Deep Learning Approach

Ziwei Wang, Shiyao Zhang, and **James J.Q. Yu***

Proc. IEEE Intelligent Transportation Systems Conference, Rhodes, Greece, Sept. 2020, Pages 593-598, DOI: 10.1109/ITSC45102.2020.9294402.

[17] FedGRU: Privacy-preserving Traffic Flow Prediction via Federated Learning

Yi Liu, Shuyu Zhang, Chenhan Zhang, and **James J.Q. Yu***

Proc. IEEE Intelligent Transportation Systems Conference, Rhodes, Greece, Sept. 2020, Pages 3517-3522, DOI: 10.1109/ITSC45102.2020.9294453.

[18] MultiMix: A Multi-Task Deep Learning Approach for Travel Mode Identification with Few GPS Data

Xiaozhuang Song, Christos Markos, and **James J.Q. Yu***

Proc. IEEE Intelligent Transportation Systems Conference, Rhodes, Greece, Sept. 2020, Pages 2398-2403, DOI: 10.1109/ITSC45102.2020.9294272.

[19] PPGAN: Privacy-Preserving Generative Adversarial Network

Yi Liu, Jialiang Peng, **James J.Q. Yu**, and Yi Wu

Proc. IEEE International Conference on Parallel and Distributed Systems, Tianjin, China, Dec. 2019, Pages 985-989, DOI: 10.1109/ICPADS47876.2019.00150.

[20] Online Traffic Speed Estimation for Urban Road Networks with Few Data: A Transfer Learning Approach

James J.Q. Yu

Proc. IEEE Intelligent Transportation Systems Conference, Auckland, New Zealand, Oct. 2019, Pages 4024-4029, DOI: 10.1109/ITSC.2019.8917502.

[21] Low-rank Singular Value Thresholding for Recovering Missing Air Quality Data

Yangwen Yu, **James J.Q. Yu***, Victor O.K. Li, and Jacqueline C.K. Lam

Proc. IEEE International Conference on Big Data, Boston, MA, Dec. 2017, Pages 508-513, DOI: 10.1109/BigData.2017.8257965.

[22] Energy Exchange Coordination of Off-Grid Charging Stations with Vehicular Energy Network

James J.Q. Yu, Albert Y.S. Lam, and Siew-Chong Tan

Proc. IEEE International Conference on Smart Grid Communications, Dresden, Germany, Oct. 2017, Pages 375-380, DOI: 10.1109/SmartGridComm.2017.8340687.

[23] Robust Routing for Vehicular Energy Network Routing

Albert Y.S. Lam and **James J.Q. Yu**

Proc. ACM International Conference on Future Energy Systems, Shatin, Hong Kong, May 2017, Pages 341-346, DOI: 10.1145/3077839.3078465.

[24] Maximizing Aggregator Profit through Energy Trading by Coordinated Electric Vehicle Charging

James J.Q. Yu, Junhao Lin, Albert Y.S. Lam, and Victor O.K. Li

Proc. IEEE International Conference on Smart Grid Communications, Sydney, Australia, Nov. 2016, Pages 497-502, DOI: 10.1109/SmartGridComm.2016.7778810.

[25] Coordinated Autonomous Vehicle Parking for Vehicle-to-Grid Services

Albert Y.S. Lam, **James J.Q. Yu**, Yunhe Hou, and Victor O.K. Li

Proc. IEEE International Conference on Smart Grid Communications, Sydney, Australia, Nov. 2016, Pages 284-289, DOI: 10.1109/SmartGridComm.2016.7778775.

[26] Joint Relay and User Selection for Two-hop Multi-relay Multi-user MIMO Systems

Yijie Mao, Sobia Jangsher, **James J.Q. Yu**, and Victor O.K. Li

Proc. IEEE International Conference on Communication Systems, Shenzhen, China, Dec. 2016, DOI: 10.1109/ICCS.2016.7833597.

[27] Parameter Sensitivity Analysis of Social Spider Algorithm

James J.Q. Yu and Victor O.K. Li

Proc. IEEE Congress on Evolutionary Computation, Sendai, Japan, May 2015, Pages 3200-3205, DOI: 10.1109/CEC.2015.7257289.

[28] Adaptive Chemical Reaction Optimization for Global Numerical Optimization

James J.Q. Yu, Albert Y.S. Lam, and Victor O.K. Li

Proc. IEEE Congress on Evolutionary Computation, Sendai, Japan, May 2015, Pages 3192-3199, DOI: 10.1109/CEC.2015.7257288.

[29] Base Station Switching Problem for Green Cellular Networks with Social Spider Algorithm

James J.Q. Yu and Victor O.K. Li

Proc. IEEE World Congress on Computational Intelligence, Beijing, China, Jul. 2014, Pages 2338-2344, DOI: 10.1109/CEC.2014.6900235.

[30] Chemical Reaction Optimization for the Set Covering Problem

James J.Q. Yu, Albert Y.S. Lam, and Victor O.K. Li

Proc. IEEE World Congress on Computational Intelligence, Beijing, China, Jul. 2014, Pages 512-519, DOI: 10.1109/CEC.2014.6900233.

[31] An Inter-molecular Adaptive Collision Scheme for Chemical Reaction Optimization

James J.Q. Yu, Victor O.K. Li, and Albert Y.S. Lam

Proc. IEEE World Congress on Computational Intelligence, Beijing, China, Jul. 2014, Pages 1998-2004, DOI: 10.1109/CEC.2014.6900234.

[32] Optimal V2G Scheduling of Electric Vehicles and Unit Commitment using Chemical Reaction Optimization

James J.Q. Yu, Victor O.K. Li, and Albert Y.S. Lam

Proc. IEEE Congress on Evolutionary Computation, Cancun, Mexico, Jun. 2013, Pages 392-399, DOI: 10.1109/CEC.2013.6557596.

[33] Sensor Deployment for Air Pollution Monitoring Using Public Transportation System

James J.Q. Yu, Victor O.K. Li, and Albert Y.S. Lam

Proc. IEEE World Congress on Computational Intelligence, Brisbane, Australia, Jun. 2012, DOI: 10.1109/CEC.2012.6256495.

[34] Real-Coded Chemical Reaction Optimization with Different Perturbation Functions

James J.Q. Yu, Albert Y.S. Lam, and Victor O.K. Li

Proc. IEEE World Congress on Computational Intelligence, Brisbane, Australia, Jun. 2012, DOI: 10.1109/CEC.2012.6252925.

[35] Chemical Reaction Optimization for the Optimal Power Flow Problem

Yi Sun, Albert Y.S. Lam, Victor O.K. Li, Jin Xu, and **James J.Q. Yu**

Proc. IEEE World Congress on Computational Intelligence, Brisbane, Australia, Jun. 2012, DOI: 10.1109/CEC.2012.6253003.

[36] Evolutionary Artificial Neural Network Based on Chemical Reaction Optimization

James J.Q. Yu, Albert Y.S. Lam, and Victor O.K. Li

Proc. IEEE Congress on Evolutionary Computation, New Orleans, LA, Jun. 2011, Pages 2083-2090, DOI: 10.1109/CEC.2011.5949872.

Patents

[1] **交通模式识别方法、设备及存储介质**

余剑峤, 宋晓壮

Chinese Patent for Invention / **中国发明专利**, No. CN112101427B, granted.

[2] **到达时间预测方法、装置、电子设备及存储介质**

余剑峤, 叶勇超, 朱元绍

Chinese Patent for Invention / **中国发明专利**, No. 202111383461.8, filed.

[3] **交通预测方法、装置、设备及计算机可读存储介质**

余剑峤, 张晨涵, 张舒昱

Chinese Patent for Invention / **中国发明专利**, No. 202111374073.3, filed.

[4] **交通速度预测模型构建方法、交通速度预测方法及装置**

余剑峤, 张晨涵, 张舒昱

Chinese Patent for Invention / **中国发明专利**, No. 202111371157.1, filed.

[5] **无人驾驶车辆路径规划方法、设备及计算机可读存储介质**

余剑峤, 张世尧, 马科斯 · 克里斯托斯

Chinese Patent for Invention / **中国发明专利**, No. 202111360920.0, filed.

[6] **数据补全方法、装置、电子设备及存储介质**

余剑峤, 张舒昱

Chinese Patent for Invention / **中国发明专利**, No. 202111346757.2, filed.

[7] **交通流预测方法、装置、电子设备及存储介质**

余剑峤, 宋晓壮

Chinese Patent for Invention / **中国发明专利**, No. 202111340242.1, filed.

[8] **基于网络分区的交通预测方法、装置、设备及存储介质**

余剑峤, 张晨涵, 张舒昱

Chinese Patent for Invention / **中国发明专利**, No. 202111325841.6, filed.

[9] **行人轨迹预测方法、装置、设备及存储介质**

余剑峤, 高嘉时

Chinese Patent for Invention / **中国发明专利**, No. 202111324745.X, filed.

[10] **交通灯协作控制方法、装置、设备及计算机可读存储介质**

余剑峤, 高嘉时

Chinese Patent for Invention / **中国发明专利**, No. 202111321571.1, filed.

[11] 出行时间分布预测方法
余剑峤, 宋晓壮
Chinese Patent for Invention / **中国发明专利**, No. 202111237316.9, filed.

[12] 交通数据补全方法、系统及存储介质
余剑峤, 宋晓壮, 叶勇超
Chinese Patent for Invention / **中国发明专利**, No. 202111230789.6, filed.

[13] 交通数据补全方法、装置、设备及存储介质
余剑峤, 叶勇超
Chinese Patent for Invention / **中国发明专利**, No. 202111148228.1, filed.

[14] 交通信息预测方法、装置、设备及存储介质
余剑峤, 黄芸洁, 宋晓壮
Chinese Patent for Invention / **中国发明专利**, No. 202111147932.5, filed.

[15] 目标矩阵预测方法、装置、设备及存储介质
余剑峤, 杨翊玄
Chinese Patent for Invention / **中国发明专利**, No. 202111145198.9, filed.

[16] 速度预测方法、装置、设备及存储介质
余剑峤, 张晨涵, 吴颖, 宋晓壮
Chinese Patent for Invention / **中国发明专利**, No. 202110738509.6, filed.

[17] 协作式的模型训练方法及装置
余剑峤, 朱元绍, 刘毅
Chinese Patent for Invention / **中国发明专利**, No. 202110719669.6, filed.

[18] 交通模式聚类模型训练方法、模式识别方法及存储介质
余剑峤, 马科斯 · 克里斯托斯, 宋晓壮
Chinese Patent for Invention / **中国发明专利**, No. 202010869101.8, filed.

[19] 交通流量的预测方法、装置、设备及计算机存储介质
余剑峤, 刘毅, 邹勰鑫
Chinese Patent for Invention / **中国发明专利**, No. 202010407367.0, filed.

[20] 交通流量的预测方法、装置、设备及计算机存储介质
余剑峤, 刘毅, 邹勰鑫
Chinese Patent for Invention / **中国发明专利**, No. 202010406864.9, filed.

[21] 一种微电网孤岛及故障检测方法、装置及存储介质
余剑峤, 邹勰鑫, 张晨涵, 王子薇
Chinese Patent for Invention / **中国发明专利**, No. 201911049430.1, filed.

Invited Talks

[1] Artificial Intelligence: Addressing Challenges of Urban Transportation
Annual meeting of Shenzhen Association for Artificial Intelligence, Shenzhen, China, Apr. 2021.

[2] Graph Deep Learning: Deep Learning on graphs and in transportation systems
SUSTech-UTokyo Joint Research Center Smart City Youth Scholars Forum, Shenzhen, China, Dec. 2019.
SUSTech Workshop on Artificial Intelligence and Autonomous Driving, Shenzhen, China, Oct. 2019.

[3] Geometric Deep Learning: Deep Learning on graphs and in smart cities
IEEE Computational Intelligence Society Webinar, Jul. 2019.
SUSTech-UTS Joint Workshop, Shenzhen, China, May 2019.

[4] Delay Aware Power System Synchrophasor Recovery and Prediction Framework

The University of Hong Kong, Hong Kong, Oct. 2018.

Hong Kong University of Science and Technology, Hong Kong, Jun. 2018.

[5] From Smart Grids to Smart Cities: Opportunities and Challenges

Southern University of Science and Technology, Shenzhen, China, Apr. 2018.