# Li Yan

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 Homepage

## Research Interests

My research addresses the issue of bridging extreme-scale urban sensor infrastructure, effective data analysis and system designing for complex urban systems in an interdisciplinary perspective. Currently, I am especially interested in the following topics: *Data-driven Urban Cyber-Physical Systems*, *Urban Big Data Analytics* and *Internet of Things*.

## Research and Professional Experience

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|---|---|
| **Massachusetts Institute of Technology**, *Postdoctoral Fellow* | 2020.03 – Present |
| **University of Virginia**, *Research Assistant* | 2016.08 – 2019.12 |
| **Shenzhen Institutes of Advanced Technology**, *Visiting Scholar* | 2015.06 – 2015.08 |
| **Clemson University**, *Research Assistant* | 2013.08 – 2016.07 |
| **Xi'an Jiaotong University**, *Direct Admission to Ph.D. Program* | 2010.09 – 2011.06 |
| **Xi'an Jiaotong University**, *Research Assistant* | 2010.03 – 2011.06 |

## Education

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|---|---|
| **University of Virginia** | Charlottesville, VA, USA |
| · Ph.D., Computer Science, GPA 4.0/4.0 | Dec. 2019 |
| **University of Florida** | Gainesville, FL, USA |
| · M.S., Electrical and Computer Engineering, GPA 3.88/4.0 | May 2013 |
| **Xi'an Jiaotong University** | Xi'an, China |
| · B.S., Information Engineering | Jun. 2010 |

## Awards and Honors

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|---|---|
| **George N. Saridis Best Transactions Paper Award**, *IEEE ITS Society* | 2020 |
| **Outstanding Research Award**, *University of Virginia* | 2018 |
| **Best-in-Session-Presentation Award**, *IEEE INFOCOM* | 2017 |
| **Student Travel Grant**, *CPS Week* | 2017 |
| **NSF Student Travel Grant**, *IEEE INFOCOM* | 2016 |
| **Ph.D. Fellowship**, *University of Virginia* | 2016 |
| **NSF Student Travel Grant**, *IEEE SECON* | 2015 |
| **Outstanding Undergraduate Student**, *Xi'an Jiaotong University* | 2008 |
| **National Scholarship**, *Xi'an Jiaotong University* | 2008 |
| **Siyuan Scholarship**, *Xi'an Jiaotong University* | 2009 |
| **Siyuan Scholarship**, *Xi'an Jiaotong University* | 2008 |
| **Siyuan Scholarship**, *Xi'an Jiaotong University* | 2007 |

## Publications

### Conference Publications

C14. **[CIKM'20]**  C. Qiu, A. Squicciarini, Z. Li, C. Pang and **L. Yan,**  Time-Efficient Geo-Obfuscation to Protect Worker Location Privacy over Road Networks in Spatial Crowd-

**sourcing,** Proc. of ACM International Conference on Information & Knowledge Management, *October 19-23, 2020, ONLINE*

C13. **[MASS'20] L. Yan,** H. Shen, L. Kang, J. Zhao and C. Xu, **Reinforcement Learning based Scheduling for Cooperative EV-to-EV Dynamic Wireless Charging,** Proc. of IEEE International Conference on Mobile Ad-Hoc and Smart Systems, *December 10-13, 2020, Delhi NCR, India*

C12. **[MASS'20] L. Yan,** H. Shen, L. Kang, J. Zhao and C. Xu, **CD-Guide: A Reinforcement Learning based Dispatching and Charging Approach for Electric Taxicabs,** Proc. of IEEE International Conference on Mobile Ad-Hoc and Smart Systems, *December 10-13, 2020, Delhi NCR, India*

C11. **[ICDCS'20] L. Yan,** S. Mahmud, H. Shen, N. Z. Foutz and J. Anton, **MobiRescue: Reinforcement Learning based Rescue Team Dispatching in a Flooding Disaster,** Proc. of IEEE International Conference on Distributed Computing Systems, *July 8-10, 2020, Singapore*

C10. **[ICDCS'20] L. Yan,** H. Shen, L. Kang, J. Zhao and C. Xu, **MobiCharger: Optimal Scheduling for Cooperative EV-to-EV Dynamic Wireless Charging,** Proc. of IEEE International Conference on Distributed Computing Systems (Poster Session), *July 8-10, 2020, Singapore*

C9. **[MASS'19] L. Yan** and H. Shen, **Optimizing In-motion Wireless Charging Service Efficiency for Electric Vehicles: A Game Theoretic Approach,** Proc. of IEEE International Conference on Mobile Ad-Hoc and Smart Systems, *November 4-7, 2019, Monterey, CA, USA*

C8. **[ICCCN'19] (Invited Paper) L. Yan,** S. Mahmud, H. Shen, N. Z. Foutz, D. E. Brown, W. Yusuf, D. Loftis, L. Lyons, J. L. Goodall and J. Anton, **MobiAmbulance: Optimal Scheduling of Emergency Vehicles in Catastrophic Situations,** Proc. of IEEE International Conference on Computer Communications and Networks, *July 29-August 1, 2019, Valencia, Spain*

C7. **[IoTDI'17] L. Yan,** H. Shen and K. Chen, **MobiT: A Distributed and Congestion-Resilient Trajectory Based Routing Algorithm for Vehicular Delay Tolerant Networks,** Proc. of ACM/IEEE International Conference on Internet-of-Things Design and Implementation (Short Paper), *April 18-21, 2017, Pittsburgh, USA*

C6. **[INFOCOM'17] L. Yan,** H. Shen, J. Zhao, C. Xu, F. Luo and C. Qiu, **CatCharger: Deploying Wireless Charging Lanes in a Metropolitan Road Network through Categorization and Clustering of Vehicle Traffic,** Proc. of IEEE International Conference on Computer Communications, *May 1-4, 2017, Atlanta, USA [acceptance rate: 20.93%]* (<span style="color:red">**"Best-in-Session-Presentation Award"**</span>)

C5. **[ICNP'16] L. Yan,** J. Zhao, H. Shen, C. Xu and F. Luo, **CatCharge: Deploying Wireless Charging Lane in Metropolitan Scale through Categorization and Clustering of Vehicle Mobility,** Proc. of IEEE International Conference on Network Protocols (Poster Session), *November 8-11, 2016, Singapore*

C4. **[MASS'16] L. Yan** and H. Shen, **TOP: Vehicle Trajectory based Driving Speed Optimization Strategy for Travel Time Minimization and Road Congestion Avoidance,** Proc. of IEEE International Conference on Mobile Ad hoc and Sensor Systems, *October 10-13, 2016, Brasilia, Brazil*

C3. **[IOV'16] L. Yan,** H. Shen, S. Li and Y. Huang, **Electrical Vehicle Charging Station Deployment Based on Real World Vehicle Trace,** Proc. of International Conference on Internet of Vehicles, *December 7-10, 2016, Nadi, Fiji*

C2. **[INFOCOM'15]** **L. Yan,** H. Shen and K. Chen, **TSearch: Target-Oriented Low-Delay Node Searching in DTNs with Social Network Properties,** Proc. of IEEE Conference on Computer Communications, *April 26-May 1, 2015, Hong Kong, China [acceptance rate: 19%]*

C1. **[SECON'15]** **L. Yan,** K. Chen, H. Shen and G. Liu, **MobileCopy: Resisting Correlated Node Failures to Enhance Data Availability in DTNs,** Proc. of IEEE International Conference on Sensing, Communication, and Networking, *June 22-25, 2015, Seattle, USA [acceptance rate: 28%]*

## Journal Publications

J10. **[TMC'21]** **L. Yan,** H. Shen, K. Chen and G. Liu, **MobileCopy: Improving Data Availability and File Search Efficiency in Delay Tolerant Networks against Correlated Node Failure,** IEEE Transactions on Mobile Computing, *20(1): 188-203, 2021*

J9. **[TCPS'21]** **L. Yan** and H. Shen, **Utilizing Game Theory to Optimize In-motion Wireless Charging Service Efficiency for Electric Vehicles,** ACM Transactions on Cyber-Physical Systems, *5(2): 19, 2021*

J8. **[TCPS'19]** **L. Yan** and H. Shen, **TOP: Optimizing Vehicle Driving Speed with Vehicle Trajectories for Travel Time Minimization and Road Congestion Avoidance,** ACM Transactions on Cyber-Physical Systems, *4(2): 17, 2019*

J7. **[ToN'18]** **L. Yan,** H. Shen and K. Chen, **MobiT: Distributed and Congestion-Resilient Trajectory Based Routing for Vehicular Delay Tolerant Networks,** IEEE/ACM Transactions on Networking, *26(3): 1078-1091, 2018*

J6. **[ACM IMWUT'18 (UbiComp'18)]** **L. Yan,** H. Shen, Z. Li, A. Sarker, J. Stankovic, C. Qiu, J. Zhao and C. Xu, **Employing Opportunistic Charging for Electric Taxicabs to Reduce Idle Time,** Proc. of ACM International Joint Conference on Pervasive and Ubiquitous Computing, *October 8-12, 2018, Singapore*

J5. **[ToN'16]** **L. Yan,** H. Shen and K. Chen, **TSearch: Target-Oriented Low-Delay Node Searching in DTNs with Social Network Properties,** IEEE/ACM Transactions on Networking, *24(6): 3841-3855, 2016*

J4. **[TITS'16]** Dey, K.C., **\*L. Yan (corresponding author),** X. Wang, Y. Wang, H. Shen, M. Chowdhury, L. Yu, C. Qiu and V. Soundararaj, **A Review of Communication, Driver Characteristics, and Controls Aspects of Cooperative Adaptive Cruise Control (CACC),** IEEE Transactions on Intelligent Transportation Systems, *17(2): 491-509, 2016* (<span style="color:red">**"George N. Saridis Best Transactions Paper Award"**</span>)

J3. **[TPDS'16]** K. Chen, H. Shen and **L. Yan,** **Efficient File Search in Delay Tolerant Networks with Social Content and Contact Awareness,** IEEE Transactions on Parallel and Distributed Systems, *27(7): 1982-1995, 2016*

J2. **[TMC'16]** K. Chen, H. Shen and **L. Yan,** **DSearching: Using Floating Mobility Information for Distributed Node Searching in DTNs,** IEEE Transactions on Mobile Computing, *15(1): 121-136, 2016*

J1. **[TPDS'15]** K. Chen, H. Shen and **L. Yan, Multicent: A Multifunctional Incentive Scheme Adaptive to Diverse Performance Objectives for DTN Routing,** IEEE Transactions on Parallel and Distributed Systems, *26(6): 1643-1653, 2015*

# Professional Services

### Organizer

1. ACM/IEEE Conference on Internet of Things Design and Implementation, 2021, Publication Chair

### Journal Reviewer

2. IEEE Transactions on Big Data (IEEE TBD), 2018, 2020
3. International Journal on Semantic Web and Information Systems (IJSWIS), 2017
4. Computer Networks (ComNet), 2017
5. IEEE Transactions on Services Computing (IEEE TSC), 2016
6. IEEE Transactions on Mobile Computing (IEEE TMC), 2016, 2017
7. IEEE Transactions on Intelligent Transportation Systems (IEEE TITS), 2014, 2017

### Conference Reviewer

8. USENIX Annual Technical Conference (USENIX ATC), 2018
9. ACM/IEEE Symposium on Edge Computing (SEC), 2017
10. IEEE/ACM International Conference on Internet-of-Things Design and Implementation (IoTDI), 2017
11. IEEE International Conference on Distributed Computing Systems (ICDCS), 2017
12. IEEE International Parallel & Distributed Processing Symposium (IPDPS), 2017
13. IEEE International Conference on Big Data (BigData), 2017
14. IEEE International Conference on Communications (ICC), 2016
15. International Conference on Parallel Processing (ICPP), 2015
16. IEEE International Conference on High Performance Computing, Data, and Analytics (HiPC), 2016, 2017
17. IEEE Cluster Conference (Cluster), 2016
18. IEEE International Conference on Sensing, Communication and Networking (SECON), 2016
19. IEEE International Conference on Parallel Processing (ICPP), 2015
20. IEEE/ACM International Symposium on Cluster, Cloud and Grid Computing (CCGrid), 2015, 2017
21. IEEE International Conference on Mobile Ad-hoc and Sensor Systems (MASS), 2014, 2015, 2017
22. IEEE International Conference on Computer Communications (INFOCOM), 2014, 2017, 2018
23. IEEE International Conference on Network Protocols (ICNP), 2014, 2016