

## Curriculum Vitae



### **Dr Liu Fang**

Lecturer

School of Science and Technology

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### **Education Qualifications**

2015	Doctor of Philosophy (Computer Science), Nanyang Technological University
2011	Master of Engineering, Xidian University, China
2008	Bachelor of Engineering, Xidian University, China

### **Academic and Professional Experience**

2020 – Present	Lecturer, School of Science and Technology, Singapore University of Social Sciences
2019 – 2020	Scientist, Sentient.io Pte Ltd, Singapore
2017 – 2019	Research Fellow, Singapore Institute of Manufacturing Technology, A*STAR
2016 – 2017	Research Fellow, School of Computer Science and Engineering, Nanyang Technological University
2015 – 2016	Research Assistant, School of Computer Science and Engineering, Nanyang Technological University

### **Memberships and Professional Activities**

2010 – Present	Member, Institute of Electrical and Electronic Engineering (IEEE), USA
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### **Research Interests**

- Data privacy preserving
- Cybersecurity
- Data Analytics
- Artificial Intelligence
- Computational Intelligence

## Selected Publications

### Selected Journals

- Fang Liu**, Wei Zhang, Indriyati Atmosukarto, et al. "TransLine: Transfer Learning for Accurate and Explainable Power Line Anomaly Detection with Insufficient Data." CCF Transactions on Pervasive Computing and Interaction (TPCI), pp. 1-14. May, 2023.
- Pan Lai, Rui Fan, Xiao Zhang, Wei Zhang, **Fang Liu**, et al. "Utility Optimal Thread Assignment and Resource Allocation in Multi-Server Systems." IEEE/ACM Transactions on Networking (TON), vol. 30, no. 2, pp. 735-748. April, 2022.
- Wei Zhang, Yonggang Wen, Loi Lei Lai, **Fang Liu**, et al. "Cost Optimal Data Center Servers: A Voltage Scaling Approach." IEEE Transactions on Cloud Computing (TCC), vol. 9, no. 1, pp. 118-130. IEEE. January-March 2021. (Impact Factor: 7.928)
- Wei Zhang, Yonggang Wen, Loi Lei Lai, **Fang Liu**, et al. "Electricity Cost Minimization for Interruptible Workload in Data Centers." IEEE Transactions on Services Computing (TSC), vol. 13, no. 6, pp. 1059-1071. IEEE. November/December 2020. (Impact Factor: 5.823)
- Wei Zhang, **Fang Liu**, and Rui Fan. "Improved Thermal Comfort Modeling for Smart Buildings: A Data Analytics Study." International Journal of Electrical Power & Energy Systems. Vol. 103, pp. 634-643. December, 2018. (citations: 40+)
- Wei Zhang, Rui Fan, Yonggang Wen and **Fang Liu**. "Energy Optimal Wireless Data Transmission for Wearable Devices: A Compression Approach." IEEE Transactions on Vehicular Technology (TVT), vol. 67, no. 10, pp. 9605-18. IEEE. October 2018. (Impact Factor: 5.339)

### Selected Conferences

- Syabil Soedirman Salamat, **Fang Liu**, et al. "It Is About Weather: Explainable Machine Learning for Traffic Accident Understanding." IEEE International Conference on Systems, Man, and Cybernetics (SMC). In Press. IEEE. Hawaii, USA. October 1–4, 2023. (flagship conference, IEEE SMC Society)
- Fang Liu**, Teck Wei Low, et al. "TransLine: Transfer Learning for Accurate Power Line Anomaly Detection with Insufficient Data." IEEE International Conference on Communications (ICC). pp. 5543-5548. IEEE. Seoul, South Korea. May 16–20, 2022. (flagship conference, IEEE Communications Society)
- Wei Zhang, Yonggang Wen, and **Fang Liu**. "Towards Cost-Optimal Energy Procurement for Cooling as a Service: A Data-Driven Approach." IEEE Global Communications Conference (GLOBECOM). pp 1-6. IEEE. Madrid, Spain. December 7 - 11, 2021. (flagship conference, IEEE Communications Society)
- Wei Zhang, **Fang Liu**, Yonggang Wen, and Bernard Nee. "Toward Explainable and Interpretable Building Energy Modelling: an Explainable Artificial Intelligence Approach." In Proceedings of the 8th ACM International Conference on Systems for Energy-Efficient Buildings, Cities, and Transportation (BuildSys). pp. 255-258. ACM. New York, NY, USA. November 17 – 18, 2021.

- Yifeng Pan, **Fang Liu**, Ji Yang, et al. " Broken Power Strand Detection with Aerial Images: A Machine Learning based Approach." In 2020 IEEE international smart cities conference (ISC2), pp. 1-7. IEEE. Piscataway, NJ, USA. September 28 - October 1, 2020.
- Jiaqiang Yeow, Yongqing Zhu, Paul Horng Jyh Wu, **Fang Liu**. "IoT Smart Trolley System for Healthcare." The Sixth IRC Conference on Engineering and Technology (IRC-SET), pp. 413-423. Springer. Singapore. July 18, 2020. (Best Paper Award)
- Fang Liu**, et al. "QoE-Driven Mobile Streaming: A Location-aware Approach." IEEE International Conference on Multimedia & Expo (ICME), pp. 1708-1713. IEEE. Shanghai, China. July 8 - 12, 2019. (flagship multimedia conference, 4x IEEE societies)
- Fang Liu**, Kee Jin Lee, and Jihoon Hong. "A Feature-Aware Online Learning Approach for Support Vector Machine Classification." International Conference on Control, Automation, Robotics and Vision (ICARCV). IEEE. Singapore. November 18 - 21, 2018. (Best Paper Nomination, 9 out of 340 Nominated.)
- Lai, Pan, Rui Fan, Wei Zhang, and **Fang Liu**. " Utility Maximizing Thread Assignment and Resource Allocation." IEEE International Parallel and Distributed Processing Symposium (IPDPS), pp. 433-42. IEEE. Orlando, Florida USA. May 29 - June 2, 2016. (acceptance rate: 23%).
- Fang Liu**, Wee Keong Ng, et al. "Encrypted SVM for Outsourced Data Mining." IEEE International Conference on Cloud Computing (CLOUD), pp. 1085-92. IEEE. New York, USA. June 27 - July 2, 2015. (acceptance rate: 15%; citations: 30+)
- Fang Liu**, Wee Keong Ng, et al. "Encrypted Set Intersection Protocol for Outsourced Datasets." IEEE International Conference on Cloud Engineering (IC2E), pp. 135-40. IEEE. Boston, Massachusetts, USA. March 10-14, 2014. (acceptance rate: 20%; citations: 40+)
- Fang Liu**, Wee Keong Ng, et al. "Encrypted Scalar Product Protocol for Outsourced Data Mining." IEEE International Conference on Cloud Computing (CLOUD), pp. 336-43. IEEE. Alaska, USA. June 27 - July 2, 2014. (acceptance rate: 19%)
- Maoguo Gong, **Fang Liu**, et al. "Interactive MOEA/D for Multi-objective Decision Making." Annual Conference on Genetic and Evolutionary Computation Conference (GECCO), pp. 721-8. ACM. Dublin, Ireland. July 12-16, 2011. (citations: 90+)

## Selected Projects

### Ongoing

Co-PI. "Factors Affecting Perception and Judgment of Trustworthiness." Temasek Laboratories@NTU Research Grant. Fund: S\$900,000+. 3 years. Started on Aug. 2022 (multi-institutional).

### Completed

PI. "Data Driven Traffic Accidents Visualization and Root Cause Quantification with Explainable Artificial Intelligence for Improved Road Safety and Urban Planning." Mitsui Sumitomo Insurance Welfare Foundation (MSIWF) 2021 Research Grant. Fund: S\$10,000 (direct cost). Completed in 2023.

### Professional Service

#### Selected Chairs & Technical Program Committee (TPC)

- 2023 **Session Chair**, IEEE Conference on Systems, Man and Cybernetics (SMC)
- 2023-2024 **PC**, IEEE International Conference on Service Operations and Logistics, and Informatics (SOLI)
- 2022-2023 **PC**, IRC Conference on Science, Engineering and Technology (IRC-SET)
- 2022 **PC**, International Joint Conference on Artificial Intelligence (IJCAI)
- 2022 **TPC**, IEEE International Conference on Communications, Control, and Computing Technologies for Smart Grids (SmartGridComm)
- 2021-2022 **Area Chair**, IEEE International Conference on Multimedia and Expo (ICME)
- 2021 **Regional Chair**, the 9th International Conference on Information Technology: IoT and Smart City (ICIT)
- 2021 **TPC**, ACM International Conference on Multimedia (MM)
- 2021 **TPC**, IEEE Global Communications Conference (GLOBECOM)
- 2021 **TPC**, International Joint Conference on Artificial Intelligence (IJCAI)
- 2020 **Session Chair**, IEEE International Smart Cities Conference (ISC2)
- 2020 **TPC**, International Joint Conference on Artificial Intelligence - Pacific Rim International Conference on Artificial Intelligence (IJCAI-PRICAI)

#### Selected Reviewer

- IEEE Internet of Things Journal (IoT-J) (IF:9.936)
- IEEE Transactions on Multimedia (TMM) (IF: 5.452)
- IEEE Access (IF: 3.745)
- IEEE Transactions on Sustainable Computing (TSUSC) (IF: 2.456)
- IEEE Transactions on Circuits and Systems I: Regular Papers (TCAS-I) (IF: 2.407)
- IEEE International Conference on Multimedia and Expo (ICME)
- IEEE International Conference on Computer Communications (INFOCOM)
- IEEE Conference on Systems, Man, and Cybernetics (SMC)
- International Joint Conference on Artificial Intelligence (IJCAI)
- Digital Trust (DTC) Research Grant Call

**Society**

- Institute of Electrical and Electronic Engineering (IEEE)
- IEEE Communications Society (IEEE ComSoc)
- IEEE Computer Society (IEEE CS)
- IEEE Women in Engineering (IEEE WIE)

*Updated on 29 Nov 2023*