

# Shuoyao Wang

E-mail: [sywang@szu.edu.cn](mailto:sywang@szu.edu.cn) Tel:+8613691870269 GitHub: [wsyCUHK](#)

## EXPERIENCE

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- Shenzhen University**, Shenzhen May 2020 - Present
- Assistant Professor (full-time)
- Tencent**, Shenzhen Dec. 2018 - Apr. 2020
- Machine Learning Senior Researcher (full-time)
- The Chinese University of Hong Kong**, Hong Kong Aug. 2013 - Jul. 2018
- Ph.D., Department of Information Engineering Advisor: [Yingjun Zhang Angela](#) (Fellow, IEEE)
  - Thesis: Demand Response Strategy in Electricity Market: an Energy Storage System Perspective
- The Chinese University of Hong Kong**, Hong Kong Sep. 2009 - Jun. 2013
- B.Eng.(First Class Honour), Department of Information Engineering
  - Thesis: Pattern Recognition through Wavelet Transform on Automatic Trading Systems

## RESEARCH INTERESTS

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- Multimedia Processing and Communication, Smart Grid Communication, and Internet of Things
- My research applies state-of-the-art machine learning techniques to drastically improve the performance of networked systems, such as video streaming and power systems.

## PUBLICATIONS

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- Journal
  1. **S. Wang**, S. Bi and Y. J. A. Zhang, "Deep Reinforcement Learning With Communication Transformer for Adaptive Live Streaming in Wireless Edge Networks," in *IEEE Journal on Selected Areas in Communications*, vol. 40, no. 1, pp. 308-322, Jan. 2022.
  2. **S. Wang**, S. Bi, and Y. J. Zhang, "Adaptive Wireless Video Streaming: Joint Transcoding and Transmission Resource Allocation," accepted by *IEEE Transactions on Wireless Communications*.
  3. H. Yan and **S. Wang**, "FCGP: Infrared and Visible Image Fusion via Joint Contrast and Gradient Preservation," in *IEEE Signal Processing Letters*, vol. 28, pp. 2038-2042, 2021.
  4. T. Wu, Y. J. Zhang, and **S. Wang**, "Deep Learning to Optimize: Security-Constrained Unit Commitment with Uncertain Wind Power Generation and BESSs," in *IEEE Transactions on Sustainable Energy*, vol. 13, no. 1, pp. 231-240, Jan. 2022.
  5. **S. Wang**, S. Bi, and Y. J. Zhang, "Locational Detection of False Data Injection Attack in Smart Grid: a Multi-label Classification Approach," *IEEE Internet of Things Journal*, vol. 7, no. 9, pp. 8218-8227, Sept. 2020.
  6. **S. Wang**, S. Bi, and Y. J. Zhang, "Reinforcement Learning for Real-time Pricing and Scheduling Control in EV Charging Stations," *IEEE Transactions on Industrial Informatics*, vol. 17, no. 2, pp. 849-859, Feb. 2021.

7. **S. Wang**, S. Bi, and Y. J. Zhang, "Demand response management for profit maximizing energy loads in real-time electricity market," *IEEE Transactions on Power Systems*, vol. 33, no. 6, pp. 6387-6396, Nov. 2018.
  8. **S. Wang**, S. Bi, Y. J. Zhang, and J. W. Huang, "Electrical vehicle charging station profit maximization: admission, pricing, and online Scheduling," *IEEE Transactions on Sustainable Energy*, vol. 9, no. 4, pp. 1722-1731, Oct. 2018.
  9. X. Tang, C. Sun, S. Bi, **S. Wang**, and Y. J. Zhang, A Holistic Review on Advanced Bi-directional EV Charging Control Algorithms, accepted by ACM SIGEnergy Energy Informatics Review.
- Conference
    1. J. Yang , Y. Jiang, and **S. Wang**, "Enhancement or Super-Resolution: Learning-based Adaptive Video Streaming with Client-Side Video Processing," accepted by 2022 *IEEE International Conference on Communications (ICC)*.
    2. H. Yan and **S. Wang**, "L2 norm is all your need: infrared-visible image fusion via guided transformation minimization," accepted by 2021 *IEEE International Conference on Multimedia and Expo (ICME)*, Shenzhen, China, Jul. 2021.
    3. **S. Wang** and D. Zhu, "Interpretable multimodal learning for intelligent regulation in online payment systems," *International Joint Conference on Artificial Intelligence (IJCAI)*, Yokohama, Japan, July 2020.
    4. **S. Wang**, S. Bi, and Y. J. Zhang, "The impacts of energy customers demand response on real-time electricity market participants," *IEEE International Conference on Communications (ICC)*, Kansas City, MO, 2018, pp. 1-7.
    5. **S. Wang**, S. Bi, and Y. J. Zhang, "A reinforcement learning approach for EV charging station dynamic pricing and scheduling control," *IEEE Power & Energy Society General Meeting (PESGM)*, Portland, OR, USA, Aug 2018.

## TEACHING

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- 2022 Fall/2021 Fall: Machine Learning
- 2022 Spring/2021 Spring: Probability Theory and Statistics

## PROFESSIONAL ACTIVITIES

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- **Technical Program Committee (TPC) Members**
  - Wireless and Optical Communications Conference (WOCC)
- **Technical Reviewers**
  - IEEE Transactions on Smart Grid (TSG)
  - IEEE Transactions on Power Systems (TPWRS)
  - IEEE Transactions on Sustainable Energy (TSNE)
  - IEEE Transactions on Industrial Application (TSNE)
  - IEEE International Conference on Communications (ICC)
  - IEEE Power & Energy Society General Meeting (PESGM)