

# Tian LIU

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## Curriculum Vitae

### Personal Data

Name Tian LIU  
Email tliuai@connect.ust.hk  
Website <http://c2e.ece.ust.hk/liutian>

### Education

- 2014–present **Ph.D. Student, Electronic & Computer Engineering**, *The Hong Kong University of Science and Technology (HKUST)*, Hong Kong, *GPA – 4.05/4.0*.  
- Supervisor: Danny H.K. Tsang
- 2013–2014 **Master's Program, Electrical Engineering**, *Xi'an Jiaotong University (XJTU)*, Xi'an, China.
- 2011–2013 **Engineering Diploma, General Engineering**, *Ecole Centrale Marseille (ECM)*, Marseille, France, *GPA – 3.8/4.0*.
- 2009–2013 **B.E., Electrical Engineering**, *Xi'an Jiaotong University*, Xi'an, China, *GPA – 3.8/4.0*.

### Research Interests

- Optimization in power systems

### Research Experience

- 2014–present **Research Assistant**, C2E Group, HKUST, Hong Kong.  
Research in energy management, market design and optimization in smart grids.
- Summer 2013 **Research Intern**, Laboratory M2P2, Marseille, France.  
Simulated, analyzed the results of reverse osmosis experiments and analyzed the sensibility of different parameters.

### Awards

- 2014–present Postgraduate Scholarship, HKUST.
- 2015, 2017 Research Travel Grant, HKUST.
- 2011–2013 State-sponsored Scholarship for Sino-French 4+4 Program, China Scholarship Council.

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## Publications

- [J1] **T. Liu**, B. Sun and D.H.K. Tsang, "Rank-one Solutions for SDP Relaxation of QCQPs in Power Systems," accepted by *IEEE Transactions on Smart Grid*, 2017.
- [J2] **T. Liu**, X. Tan, B. Sun, Y. Wu and D.H.K. Tsang, "Energy management of cooperative microgrids: A distributed optimization approach," *International Journal of Electrical Power & Energy Systems*, 96 (2018): 335-346.
- [C1] **T. Liu**, X. Tan, B. Sun, Y. Wu, X. Guan, and D.H.K. Tsang, "Energy Management of Cooperative Microgrids with P2P Energy Sharing in Distribution Networks," in *Proceedings of IEEE 6th International Conference on Smart Grid Communications (IEEE SmartGridComm 2015)*, Nov. 2015.
- [C2] **T. Liu**, X. Tan, B. Sun and D.H.K. Tsang, "Market for Multi-dimensional Flexibility with Parametric Demand Response Bidding," in *Proceedings of 49th North American Power Symposium (NAPS)*, Sept. 2017.
- [C3] S. Wang, B. Sun, **T. Liu**, X. Tan, and D.H.K. Tsang, "Real-time Market-based Coordination Mechanism for Transmission and Distribution Networks", in *Proceedings of IEEE International Conference on Smart Grid Communications (IEEE SmartGridComm 2017)*, Oct. 2017.
- [C4] A. Zhang, B. Sun, **T. Liu**, X. Tan, S. Wang and D.H.K. Tsang, "Joint Voltage and Frequency Regulation by EV Charging Scheduling in the Distribution Network," in *Proceedings of IEEE PES 9th Conference on Innovative Smart Grid Technology (ISGT 2018)*, Feb. 2018.

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## Working Papers

- [i1] **T. Liu**, X. Tan, B. Sun and D.H.K. Tsang, "Market for Load Aggregators with Multi-Dimensional Flexibility under Wind Uncertainty," *working paper*, 2017
- [i2] S. Wang, B. Sun, **T. Liu**, X. Tan, and D.H.K. Tsang, "Real-time Interactions between Transmission and Distribution Networks", *under review*, 2017.

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## Teaching Experience

- 2014-2017 Teaching Assistant for ELEC 1200, A System View of Communications: from Signals to Packets, HKUST.
- 2016-2017 Teaching Assistant for ELEC 2500/4010H, Introduction to Smart Electric Power Systems, HKUST.

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## Service

### Reviewer

- Journals IEEE Transactions on Smart Grid, IEEE Transactions on Industrial Informatics, IEEE Transactions on Sustainable Energy.
- Conferences IEEE SmartGridComm, IEEE Wireless Communications and Networking Conference (WCNC).

## — Languages

Mandarin **Mother tongue**  
English **Fluent**  
French **Fluent (DALF C1)**

## — Interests

- Table tennis
- Swimming
- Saxophone