CHUAN ZHANG

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EDUCATION

Nanyang Technological University (NTU), Singapore *August 2015 - December 2018 (expected)*
Doctor of Philosophy, School of Mechanical Engineering Supervisor: Alessandro Romagnoli
PhD Thesis: Data driven modeling and optimization of energy system considering uncertainty

University of Cambridge, United Kingdom *March 2017 - March 2018*
Exchange Graduate Student, Computational modeling group Supervisor: Markus Kraft

Shanghai Jiao Tong University (SJTU), China *September 2012 - March 2015*
Master of Science, School of Mechanical Engineering
Master Thesis: Impact of residential heating/cooling system on urban micro-environment

Dalian University of Technology (DUT), China *September 2008 - July 2012*
Bachelor of Science, School of Civil and Environmental Engineering Overall GPA: 3.8/4

SELECTED JOURNAL PUBLICATIONS

1. **Chuan Zhang**, Alessandro Romagnoli, and Markus Kraft. "The limited role of fossil fuel power plant decarbonization potential in climate change mitigation considering technology learning rate." *Nature energy*, submitted, in review.
2. Li Zhou, **Chuan Zhang**, Iftekhar A. Karimi and Markus Kraft. "An ontology framework towards decentralized information management for eco-industrial parks." *Computers & Chemical Engineering*, accepted, in press.
3. **Chuan Zhang**, Liwei Cao, and Alessandro Romagnoli. "On the feature engineering of building energy data mining." *Sustainable Cities and Society*, 39(2018):508-518.
4. **Chuan Zhang**, Alessandro Romagnoli, Je Young Kim et al. "Implementation of industrial waste heat to power in Southeast Asia: an outlook from the perspective of market potentials, opportunities and success catalysts." *Energy Policy*, 106(2017):525-535.
5. **Chuan Zhang**, Alessandro Romagnoli, Li Zhou, and Markus Kraft. "Knowledge management of eco-industrial park for efficient energy utilization through ontology-based approach." *Applied Energy*, 184(2017):88-102.
6. **Chuan Zhang**, Alessandro Romagnoli, Gabriele Comodi, and Markus Kraft. "A novel methodology for the design of waste heat recovery network in eco-industrial park using techno-economic analysis and multi-objective optimization." *Applied Energy*, 184(2016):88-102.

SELECTED CONFERENCE PROCEEDINGS

1. **Chuan Zhang**, Alessandro Romagnoli and Markus Kraft. "Data-driven energy system design and optimization: A new frontier." Energy System Conference 2018, London, UK, June 2018.
2. **Chuan Zhang**, Alessandro Romagnoli and Markus Kraft. "The critical role of economic assumptions in cost-effectiveness analysis of power plant CO2 capture and storage." 41st IAEE International Conference (IAEE 2018), Groningen, Netherlands, June 2018.
3. **Chuan Zhang**, Alessandro Romagnoli, Markus Kraft. "From Numerical Model to Computational Intelligence: The Digital Transformation of Urban Energy System." World Engineers Summit Low Carbon Cities & Urban Energy Joint Conference (WES-CUE 2017), Singapore, July 2017.

4. **Chuan Zhang**, Alessandro Romagnoli and Markus Kraft. "Surrogate model based optimization of co-generation system under real-time energy commodity market." The 12th Conference on Sustainable development of Energy, Water and Environmental Systems (SDEWES 2017), Dubrovnik, Croatia, October 2017.
5. Kleinelanghorst Martin Josef, Janusz Sikorski, **Chuan Zhang**, and Markus Kraft. "J-Park Simulator: Roadmap to Smart Eco-Industrial Parks." The 2nd International Conference on Internet of Things, Data and Cloud Computing (ICC 2017), Cambridge, UK, March 2017.
6. **Chuan Zhang**, Li Zhou, Alessandro Romagnoli and Markus Kraft. "Towards Intelligent energy management of eco-industrial park through ontology based approach." The 8th International Conference on Applied Energy (ICAE 2016), Beijing, China, October 2016.

DISTINCTIONS AND AWARDS

1. Section Chair, 12th Conference on Sustainable development of Energy, Water and Environmental Systems (SDEWES 2017).
2. Student Member, IEEE, ASME, IAEE, ACM SIGKDD
3. Journal Reviewer, *Energy*, *Applied Energy*, *Renewable and Sustainable Energy Reviews* etc.
4. Nanyang Technological University Research Scholarship, Singapore, 2015-2018.
5. National Scholarship for Graduate Students, Ministry of Education, China, 9/2014.
6. First Prize in Energy Balance Solar Decathlon Competition, Department of Energy, USA, 8/2013.

RESEARCH SKILLS

Computer Languages	C/C++, MATLAB, PYTHON, R, JAVA, HMTL, SQL etc.
Professional Software	Energy Plus, TRNSYS, Aspen Plus, Power World, GAMS etc.
Computational Platforms	Apache Hadoop, Intel Distribution, Anaconda, Tensorflow etc.
Data Analytics Packages	NumPy, SciPy, Scikit-learn, Networkx, GeoPandas, Seaborn etc.

PREVIOUS RESEARCH PROJECTS

Data-driven energy system modeling with uncertainty January 2016 - Now

· Data-driven energy network modeling and optimization considering uncertainty

Energy System Optimization for Eco-Industrial Park January 2016 - Now

· Multi-objective optimization of Singapore Jurong Island Eco-industrial Park Energy System

Ontological knowledge base for efficient energy management January 2016 - Now

· Ontology based knowledge management for efficient energy system design and optimization

Building Energy Use Forecasting Model January 2016 - Now

· Building energy load forecast using advanced data-driven models (SVM,ANN,RF etc.)

Year Round Study of Air Source Heat Pump System January 2012 - August 2015

· Performance benchmarking of air source heat pump space heating and cooling system

LANGUAGE PROFICIENCY

Mandarin Mother tongue, **English** TOEFL 104, **French** Beginner