

Tanveer Ahmad

Work Status: Post-Doc Fellow (University of Macau)

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Google Scholar ID: <https://scholar.google.com/citations?user=3JLrhWoAAAAJ&hl=en>



Introduction: Tanveer Ahmad is currently possess the postdoctoral position at State Key Laboratory of Internet of Things for Smart City, University of Macau, Macau, China. He earned his PhD degree from School of Energy and Power Engineering, Huazhong University of Science and Technology (HUST), Wuhan, China in July 2019. He has authored many high quality journal and conference papers. His research work is currently focusing on energy prediction, energy analysis and management control, energy demand forecasting requirement in smart grid environment, city-scale and district-level load demand management, non-technical loss detection and prevention using smart meters, impact of non-technical losses on load demand and management, energy saving in building environment and proposing new promising forecasting models. Additionally, I'm interested in continuing the research work specially focusing on demand side management, integration of renewable energy with the conventional grid, reactive power control of transmission lines, operational challenges of smart grid, clean energy production and delivery, power system losses control and power system analysis.

Education

2016-09- 2019-06: Doctor of Philosophy in Thermal Power Engineering (PhD), Huazhong University of Science and Technology, Wuhan, China, **Subject Score: 87.8/100** Percentile

- **Thesis: Optimal Planning and Management of Energy Demand for Building Sector, Power Transmission and Distribution Networks.**

2013-09- 2016-01: Masters of Science in Electrical Engineering, Specialization (Power & Energy), COMSATS Institute of Information Technology Islamabad, Pakistan, **Subject Score: 3.39/4 CGPA**

- **Thesis: Non-Technical Loss Analysis and Prevention using Smart Meters.**

Honorary Credentials

1. **2019-06**→ Honorary International Graduate (2019).
2. **2018-12**→ HUST Outstanding Academic Excellence Award (2017-2018).
3. **2018-11**→ Chinese Government Outstanding International Student Award (2018).
4. **2017-04**→ HUST Outstanding Academic Excellence Award (2016-2017).
5. **2017-02**→ Secured the 3rd position for best research article from Hubei Province Air Conditioning Engineering Construction Association, Wuhan, China.
6. **2016-09**→ Chinese Government Scholarship-Chinese University Program (CUP) Award.
7. **2009-06**→ The Certificate of the Merit.

Expertise

1- Good interpersonal, 2- Social and managerial skills, 3- Machine Learning, 4- MATLAB Simulation, 5- Data Mining, 6- Power System Stability, 7- Energy Planning, 8- Forecasting, 9- Management Microsoft Office Software, 10- MATLAB (Simulation), 11- ETAP, 12- TRNSYS, 13- Microsoft Office, 14- SPSS, 15- Microsoft Visio, 16- Power systems CAD, 17- Energy forecasting, 18- Power transmission and distribution analysis and voltage stability

Publications (Peer-Reviewed Journal Articles)

1. **2019-07**→ **Tanveer Ahmad**, Huanxin Chen, Wahab Ali Shah. Effective bulk energy consumption control and management for power utilities using artificial intelligence techniques under conventional and renewable energy resources. July 2019 **International Journal of Electrical Power & Energy Systems** 109:242-258, (*Impact Factor* = **4.418**) ([SCI-工程技术 2 区](#))
2. **2019-05**→ **Tanveer Ahmad**, Huanxin Chen. Deep learning for multi-scale smart energy forecasting, May 2019, **Energy** 175:98-112, (*Impact Factor* = **5.537**) ([SCI-工程技术 2 区](#))
3. **2019-07**→ Chengliang Xu, Huanxin Chen, Weide Xun, Zhenxin Zhou, Tao Liu, Yuke Zeng, **Tanveer Ahmad**, Modal decomposition based ensemble learning for ground source heat pump systems 2 load forecasting, July 2019, **Energy and Buildings** 194:62-74, (*Impact Factor* = **4.495**) ([SCI-工程技术 2 区](#))
4. **2019-02**→ Y. Guo, J. Wang, H. Chen, G. Li, R. Huang, Y. Yuan, **T. Ahmad**, S. Sun, An expert rule-based fault diagnosis strategy for variable refrigerant flow air conditioning systems, **Applied Thermal Engineering** (2018), 149, 25 February 2019, 1223-1235 (*Impact Factor* = **4.026**) ([SCI-工程技术 2 区](#))
5. **2019-02**→ **Ahmad T**, Chen H. (2019) Nonlinear autoregressive and random forest approaches to forecasting electricity load for utility energy management systems. **Sustainable Cities and Society**. 45, 460-473. (*Impact Factor* = **4.624**) ([SCI-工程技术 2 区](#))
6. **2019-02**→ **Ahmad, T.**, Chen, H., Jan, S., Chengliang, X., 2019. Deployment of data-mining short and medium-term horizon cooling load forecasting models for building energy optimization and management, **International Journal of Refrigeration** 98,399–409 (*Impact Factor* = **3.233**) ([SCI-工程技术 2 区](#))
7. **2018-07**→ **Ahmad T**, Chen H. Potential of three variant machine-learning models for forecasting district level medium-term and long-term energy demand in smart grid environment. **Energy** 2018;158:1008-1020. (*Impact Factor* = **5.537**) ([SCI-工程技术 2 区](#))
8. **2018-06**→ **Ahmad T**, Chen H. et al. Supervised based machine learning models for short, medium and long-term energy prediction in distinct building environment. **Energy** 2018;158:17-32. (*Impact Factor* = **5.537**) ([SCI-工程技术 2 区](#))

9. **2018-05**→ Yabin G, Chen H, **Ahmad T**, et al. Deep learning-based fault diagnosis of variable refrigerant flow air-conditioning system for building energy saving. **Applied Energy** 2018;225:732-745. (**Impact Factor = 8.426**) (**SCI-工程技术 1 区**)
10. **2018-05**→ **Ahmad T**, Chen H. Water source heat pump energy demand prognosticate using disparate data-mining based approaches. **Energy** 2018;152:788-803. (**Impact Factor = 5.537**) (**SCI-工程技术 2 区**)
11. **2018-03**→ Ahmad T, Chen H. (2018) Utility companies strategy for short-term energy demand forecasting using machine learning based models. **Sustainable Cities and Society**. 39, 401-417. (**Impact Factor = 4.624**) (**SCI-工程技术 2 区**)
12. **2018-02**→ **T. Ahmad**, H. Chen. Short and Medium-term Forecasting of Cooling and Heating load demand in Building Environment with Data-Mining based Approaches. **Energy and Buildings** 166 (2018) 460-476. (**Impact Factor = 4.495**) (**SCI-工程技术 2 区**)
13. **2018-01**→ **T. Ahmad**, H. Chen, Y. Guo, J. Wang. A comprehensive overview on the data driven and large scale based approaches for forecasting of building energy demand: A review. **Energy and Buildings** 165 (2018) 301–320. (**Impact Factor = 4.495**) (**SCI-工程技术 2 区**)
14. **2017-10**→ **T. Ahmad**, H. Chen, J. Wang, Y. Guo. Review of various modeling techniques for the detection of electricity theft in smart grid environment. **Renewable and Sustainable Energy Reviews** 2018; 82:2916–2933. (**Impact Factor = 10.556**) (**SCI-工程技术 1 区**)
15. **2017-01**→ **T. Ahmad**. Non-technical loss analysis and prevention using smart meters. **Renewable and Sustainable Energy Reviews** 2017; 72: 573–589. (**Impact Factor = 10.556**) (**SCI-工程技术 1 区**)

Conferences (Peer-Reviewed Conferences)

1. **2019-06**→ Wahab Ali Shah, Junjia He, **Tanveer Ahmad**, 2019 11th Asia-Pacific International Conference on Lightning (APL), **IEEE-** 12-14 June 2019, 10.1109/APL.2019.8816047. (**EI**)
2. **2019-02**→ **Tanveer A**, Huanxin C. et al. Short-Term Energy Prediction for District-Level Load Management Using Machine Learning Based Approaches. The 10th International Conference on Applied Energy, Hong Kong. **Energy Procedia** 158:3331-3368. (**EI**)
3. **2019-02**→ Yao Huang, Yue Yuan, Huanxin Chen, Jiangyu Wang, Yabin Guo, **Tanveer Ahmad**, The 10th International Conference on Applied Energy, Hong Kong, **Energy Procedia** 158:3411-3616. (**EI**)
4. **2018-12**→ **Tanveer A**, Huanxin C. Deep Learning for Multi-Scale Smart District-Level Energy Planning and control: The Combination of Renewable and Conventional Energy Sources. **The 5th International Conference on Refrigeration Technology** 2018, Zhuhai, China.
5. **2018-04**→ **Tanveer A**, Huanxin C. et al. Short and Medium-Term Forecasting of Cooling Load Demand in Building Environment with Disparate Data-Mining Based Approaches. **The 6th International Conference on Cryogenics and Refrigeration (ICCR)**.

Ad-hoc Reviewer

Elsevier:

1- International Journal of Electrical Power & Energy Systems, 2- Renewable & Sustainable Energy Reviews, 3- Sustainable Cities and Society, 4- Applied Energy, 5- Energy, 6- Applied Thermal Engineering, 7- Energy and Buildings, 8- Future Generation Computing Systems

IEEE & IET:

1- IET Science, Measurement & Technology, 2- IEEE Transactions on Industrial Informatics, 3- IEEE Transactions on Smart Grid, 4- IET Smart Grid

Hobbies

Cricket, Football, Swimming, Badminton, Travelling, Adventures

Social Contacts and Personal Info

1→ **QQ:** 3201451895, 2→ **Skype:** tanveer12315, 3→ **WeChat:** tanveer-ahmad1

❖ **Languages:** 1- English, 2- Urdu, 3- Punjabi, 4- Very basic Chinese

❖ **Present Address:** Room number: S105021A, Building: PGH - S1, University of Macau Avenida da Universidade, Taipa, Macau, China.

Research Interests

1- HVAC&R (System Dynamic Simulation), 2- Renewable Energy (Solar, Winds, Geothermal), 3- Electric Power Quality (Voltage sags, swells, spikes, harmonics and transients), 4- Protective Relaying (Microcontroller, microprocessor, intelligent relays for SASed grid system), 5- Smart Grid (Smart Metering, Advanced Metering Infrastructure, 6- HVAC&R system, energy performance), 7- Thermal Power Engineering (Power plant flue gas pollution monitor and control), 8- Energy Planning and Forecasting, 9- Energy Management.

Course Work

2017-03- 2017-06→ Progress in Energy Research

2017-03- 2017-06→ Prospect of Energy Science

2016-09- 2017-01→ Machine Learning

2016-09- 2017-01→ Chinese Language

2014-03- 2014-06→ Linear Control Systems

2014-03- 2014-07→ Advanced Power System Protection

2014-03- 2014-06→ Wind Power Generation

2014-09- 2015-01→ Advanced Digital Signal Processing

2013-09- 2014-01→ Electric Power Quality

2014-09- 2015-01→ Power Transmission and Distribution

2013-03- 2014-01→ Solar Power Generation

2013-09- 2014-01→ Advanced Power Generation

Continuous Education

2012-01- 2012-02→ COMSATS University Islamabad.

Tasks: Power system simulation using ETAP Program for transmission and distribution networks.

2010-08- 2010-09→ Faizy Group of Industries.

Tasks: Testing of High Voltages Panels at Faizy Industries Gujranwala.

2009-02- 2009-03→ Pak Elektron Limited.

Tasks: Specifications Testing of High Voltages Switchgears at PEL Industries Lahore.