



## Touqeer Ahmed Jumani

**Nationality:** Pakistani **Date of birth:** 01/01/1988

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**Email address:** [touqeerahmed@muetkhp.edu.pk](mailto:touqeerahmed@muetkhp.edu.pk)

**Work:** ELECTRICAL ENGINEERING DEPARTMENT MEHRAN UNIVERSITY SZAB  
CAMPUS, 66020 Khairpur Mirs (Pakistan)

### ABOUT ME

- A motivated Ph.D. in Electrical Engineering with a strong research background in artificial intelligence-based optimized solutions for conventional power systems and Microgrids.
- Recognized for over 35 high impact factor publications and 900+ citations, showcasing expertise in developing innovative approaches to optimize power system operations.
- Seeking a postdoctoral or faculty position at world-renowned universities to contribute to cutting-edge research and advance the field of electrical engineering through AI-driven solutions.

**Associate Professor**, Electrical Engineering Department

**Head of the Department** Electrical Engineering Department, MUET SZAB Campus Khairpur Mirs' (29th September 2022 till to date)

Google Scholar: [Touqeer Jumani - Google Scholar](#)

### WORK EXPERIENCE

#### Associate Professor

**Mehran University of Engineering and Technology SZAB Campus Khairpur Mirs** [ 23/02/2022 – Current ]

City: Khairpur Mirs

Country: Pakistan

#### 1. Undergraduate Teaching

- EL-112 Applied Physics
- EL-223 Applied Electronics
- EL-122 Electronic Devices and Circuits
- ES-325 Linear Control Systems
- EL-423 Power System Protection

#### 2. Postgraduate Teaching

- Clean Energy technologies
- Power System Analysis
- Electric Power transmission and distribution

#### 3. Administrative Responsibilities

- Coordinator Board of Studies
- Coordinator OBE committee
- Convener Industrial Advisory board
- Additional Provost Hostels

#### Assistant Professor

**Mehran University of Engineering and Technology SZAB Campus** [ 02/12/2016 – 22/02/2022 ]

City: Khairpur Mirs

Country: Pakistan

**1. Undergraduate Teaching**

- i. EL-112 Applied Physics
- ii. EL-223 Applied Electronics
- iii. ES-112 Electronic Devices and Circuits
- iv. ES-325 Feedback control system

**2. Administrative Responsibilities**

- i. Coordinator Departmental Management Review Committee
- ii. Coordinator Industrial Advisory Board
- iii. Senior member Curriculum Management Review Committee)
- iv. Convener Sports Committee

**Lecturer**

**Mehran University of Engineering and Technology SZAB Campus** [ 02/01/2012 – 01/12/2016 ]

City: Khairpur Mirs

Country: Pakistan

1. Co-ordinate Labs and Lectures
2. Supervise final year students thesis and research projects.
3. Lab In-charge Power System Lab, High Voltage Lab and Machine Lab
4. Coordinator Departmental Management Review Committee
5. Pursue research, published papers and publications

**Electrical Workshop Instructor**

**IBA Community College** [ 01/10/2011 – 31/12/2011 ]

City: Naushaharo Feroz

Country: Pakistan

1. Teach students about appropriate, and safe electrical system installation.
2. Design curriculum with curricular standards.
3. Conduct lab and classroom)

**Assistant Instrument Engineer**

**Khairpur Sugar Mills** [ 01/09/2010 – 30/10/2011 ]

1. Detailed maintenance of instrumentation and control systems.
2. Commissioning of instruments and control systems in Sugar Plant.
3. Manufacturing of plant and Grid system operation.)

**EDUCATION AND TRAINING**

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**Ph.D. Electrical Power Engineering**

**Universiti Teknologi Malaysia** [ 02/2017 – 11/2020 ]

City: Johor Bahru

Country: Malaysia

**Thesis:** Dynamic Response and Power Quality Enhancement of islanded and grid-tied AC Microgrids using Salp Swarm Optimization Algorithm

**M.E ENERGY SYSTEMS ENGINEERING**

**Mehran University of Engineering Technology**

City: Khairpur Mirs

Country: Pakistan

**Field(s) of study:** Energy Systems Engineering

**Final grade:** 75%

**Thesis:** Techno Economic and Environmental Analysis of converting Grid supplied HPS lamps into Solar powered LED lamps in street lighting system at Khairpur Mirs

## **B.E ELECTRICAL (POWER)**

**Quaid-e-Awam University of Engineering Science and Technology** [ 26/12/2005 – 15/03/2010 ]

City: Nawabshah

Country: Pakistan

Final grade: 79%

## **DIGITAL SKILLS**

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MATLAB / MATLAB, Simulink, / Python / Multisim / Arduino / Simulink / Machine Learning

## **PUBLICATION STATS**

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### **PUBLICATIONS**

**Total Citations: 900+**

**h-index: 16**

**i10-index: 20**

**Total Impact Factor: 120**

## **PUBLICATIONS**

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### **1. Techno-economic Optimal Planning of an Industrial Microgrid Considering Integrated Energy Resources**

[2023]

Ahmed, M. A., Abbas, G., **Jumani T. A.**, Rashid, N., Bhutto, A. A., & Eldin, S. M. (2023). **Frontiers in Energy Research**, 11, 148.

### **2. The role of techno-economic factors for net zero carbon emissions in Pakistan**

[2023]

M. Amir Raza, MM Aman, A.Ghani Abro, M.Shahid, Darakhshan Ara, Tufail Waseer, Mohsin Ali Tunio, Nadeem Ahmed, Shakir Ali, **Touqeer Ahmed Jumani**

### **3. A Modified Particle Swarm Optimization Algorithm for Power Sharing and Transient Response Improvement of a Grid-Tied Solar PV Based AC Microgrid**

[2022]

Abbas, G., Bhutto, A. A., **Jumani T. A.**, Mirsaeidi, S., Tunio, M. A., Alnuman, H., & Alshahir, A. (2023). **Energies**, 16(1), 348.

### **4. Internal Model Control (IMC)-Based Active and Reactive Power Control of Brushless Double-Fed Induction Generator with Notch Filter**

[2022]

Memon, A., Bin Mustafa, M. W., Laghari, Z. H., **Jumani, T. A.**, Anjum, W., Ullah, S., & Aman, M. N. (2022). **International Transactions on Electrical Energy Systems**, 2022

### **5. Improved whale optimization algorithm for transient response, robustness, and stability enhancement of an automatic voltage regulator system**

[2022]

Habib, S., Abbas, G., **Jumani T. A.**, Bhutto, A. A., Mirsaeidi, S., & Ahmed, E. M. (2022). **Energies**, 15(14), 5037.

### **6. Towards Achieving 100% Renewable Energy Supply for Sustainable Climate Change in Pakistan**

[2022]

Raza, M. A., Aman, M. M., Rajpar, A. H., Bashir, M. B. A., & **Jumani T. A.** (2022). Towards Achieving 100% Renewable Energy Supply for Sustainable Climate Change in Pakistan. *Sustainability*, 14(24), 16547.

### **7. Distant temperature and humidity monitoring: prediction and measurement**

[2021]

Hafeez, F., Sheikh, U. U., Khidrani, A., Bhayo, M. A., Altbawi, S. M. A., & **Jumani T. A.** (2021). *Indonesian Journal of Electrical Engineering and Computer Science*, 24(3), 1405-1413.

### **8. Salp swarm algorithm-based optimal vector control scheme for dynamic response enhancement of brushless double-fed induction generator in a wind energy conversion system**

Memon, A., Mustafa, M. W. B., **Jumani T. A.**, Olatunji Obalowu, M., & Malik, N. U. R. (2021). Salp swarm algorithm-based optimal vector control scheme for dynamic response enhancement of brushless double-fed induction generator in a wind energy conversion system. *International Transactions on Electrical Energy Systems*, 31(12),

### **9. A novel feature engineered-CatBoost-based supervised machine learning framework for electricity theft detection**

[2021]

Hussain, S., Mustafa, M. W., **Jumani T. A.**, Baloch, S. K., Alotaibi, H., Khan, I., & Khan, A. (2021). *Energy Reports*, Vol: 7, 4425-4436.

### **10. Optimal design of Fractional order PID controller based Automatic voltage regulator system using gradient-based optimization algorithm**

[2021]

Altbawi, S. M. A., Mokhtar, A. S. B., **Jumani T. A.**, Khan, I., Hamadneh, N. N., & Khan, A. (2021). *Journal of King Saud University-Engineering Sciences*.

### **11. Internal mode control based coordinated controller for brushless doubly fed induction generator in wind turbines during fault conditions**

[2021]

Ahsanullah Memon, M. W. M., Khidrani, A., Hafeez, F., Baloch, S. K., & **Jumani, T. A.** (2021). *Indonesian Journal of Electrical Engineering and Computer Science*, 23(2), 650-656.

### **12. Dynamic response enhancement of BDFIG using vector control scheme based internal model contro**

[2021]

Ahsanullah Memon, M. W. M., Baloch, S. K., Khidrani, A., & **Ahmed T. Jumani** (2021). Dynamic response enhancement of BDFIG using vector control scheme based internal model control. *Indonesian Journal of Electrical*

*Engineering and Computer Science*.

### **13. A Research on various PV arrays manufacturing data for power comparison and optimization through extremum seeking technique**

[2020]

Ahmed, A., Baloch, M. H., Mirjat, B. A., Memon, A. A., & **Jumani, T. A.** (2021). *Sukkur IBA Journal of Emerging Technologies*, 4(1), 59-66.

### **14. A novel grid-oriented dynamic weight parameter based improved variant of Jaya algorithm**

[2020]

Leghari, Z. H., Hassan, M. Y., Said, D. M., **Jumani, T. A.**, & Memon, Z. A. (2020). A novel grid-oriented dynamic weight parameter based improved variant of Jaya algorithm. *Advances in engineering software*, 150, 102904.

**15. A novel unsupervised feature-based approach for electricity theft detection using robust PCA and outlier removal clustering algorithm**

[2020]

Hussain, S., Mustafa, M. W., **Jumani T. A.**, Baloch, S. K., & Saeed, M. S. (2020). *International Transactions on Electrical Energy Systems*, 30(11), e12572.

**16. Detection of non-technical losses in power utilities—A comprehensive systematic review**

[2020]

Saeed, M. S., Mustafa, M. W., Hamadneh, N. N., Alshammari, N. A., Sheikh, U. U., **Jumani T. A.**, ... & Khan, I. (2020). *Energies*, 13(18), 4727.

**17. Computational intelligence-based optimization methods for power quality and dynamic response enhancement of ac microgrids**

[2020]

**Jumani T. A.**, Mustafa, M. W., Hamadneh, N. N., Atawneh, S. H., Rasid, M. M., Mirjat, N. H., ... & Khan, I. (2020). *Energies*, 13(16), 4063.

**18. Jaya optimization algorithm for transient response and stability enhancement of a fractionalorder PID based automatic voltage regulator system**

[2020]

**Jumani T. A.**, Mustafa, M. W., Hussain, Z., Rasid, M. M., Saeed, M. S., Memon, M. M., ... & Nisar, K. S. (2020). *Alexandria Engineering Journal*, 59(4), 2429-2440.

**19. An efficient boosted C5. 0 decision-tree-based classification approach for detecting nontechnical losses in power utilities**

[2020]

Salman Saeed, M., Mustafa, M. W., Sheikh, U. U., **Jumani T. A.**, Khan, I., Atawneh, S., & Hamadneh, N. N. (2020). An efficient boosted C5. 0 decision-tree-based classification approach for detecting non-technical losses in power utilities. *Energies*, 13(12), 3242.

**20. Dynamic response enhancement of grid-tied ac microgrid using salp swarm optimization algorithm**

[2020]

**Jumani T. A.**, Mustafa, M. W., Rasid, M. M., & Memon, Z. A. (2020). *International Transactions on Electrical Energy Systems*, 30(5), e12321.

**21. Swarm intelligence-based optimization techniques for dynamic response and power quality enhancement of AC microgrids: A comprehensive review**

[2020]

**Jumani T. A.**, Mustafa, M. W., Alghamdi, A. S., Rasid, M. M., Alamgir, A., & Awan, A. B. (2020). *IEEE Access*, 8, 75986-76001.

**22. Salp swarm optimization algorithm-based fractional order PID controller for dynamic response and stability enhancement of an automatic voltage regulator system**

[2019]

Khan, I. A., Alghamdi, A. S., **Jumani T. A.**, Alamgir, A., Awan, A. B., & Khidrani, A. (2019). *Electronics*, 8(12), 1472.

**23. Optimal Configuration of Stand-alone Hybrid Energy System for a Remote Mobile Base Station**

[2019]

Mohd Wazir Mustafa Sani Salisu, Touqeer Abdulrahman Okino Otuoze, **Ahmed Jumani**, Muazu Jibrin Musa, Olatunji Obalowu Mohammed, 2019 IEEE 1st International Conference on Mechatronics, Automation and Cyber-Physical Computer System

**24. Salp swarm optimization algorithm-based controller for dynamic response and power quality enhancement of an islanded microgrid**

[2019]

**Jumani T. A.**, Mustafa, M. W., Md. Rasid, M., Anjum, W., & Ayub, S. (2019). *Processes*, 7(11), 840.

**25. Ensemble bagged tree based classification for reducing non-technical losses in multan electric power company of Pakistan**

Saeed, M. S., Mustafa, M. W., Sheikh, U. U., **Jumani T. A.**, & Mirjat, N. H. (2019). *Electronics*, Vol: 8(8), 860.

**26. Wind power integration: An experimental investigation for powering local communities**

[2019]

Hussain Baloch, M., Ishak, D., Tahir Chaudary, S., Ali, B., Asghar Memon, A., & **Ahmed JumaniTouqeer**. (2019). Wind power integration: An experimental investigation for powering local communities. *Energies*, 12(4), 621.

**27. Optimal power flow controller for grid-connected microgrids using grasshopper optimization algorithm**

**Jumani Touqeer Ahmed**, et al." *Electronics* Vol: 8.1 (2019): 111.

**28. Techno-Economic Feasibility Analysis of an Off-Grid Hybrid Energy System for Rural Electrification in Nigeria.**

[2019]

Sani Salisu, MW Wazir, Olatunji Obalowu Mohammed, Mamunu Mustapha, **Jumani Ahmed Touqeer**, 2019, Published by Gazi University, Faculty of Technology, Department of Electrical and Electronics Engineering.

**29. Optimal voltage and frequency control of an islanded microgrid using grasshopper optimization algorithm**

[2018]

**Jumani, T. A.**, Mustafa, M. W., Md Rasid, M., Hussain Mirjat, N., Hussain Baloch, M., & Salisu, S. (2019). *Electronics*, 8(1), 111.

**30. An improved algorithm for optimal load shedding in power systems**

[2018]

Raja Masood Larik, Mohd Wazir Mustafa, Muhammad Naveed Aman, **Touqeer Ahmed Jumani**, Suhaib Sajid, Manoj Kumar Panjwani, Publication date, 2018/7/10, Journal, *Energies*, Volume 11, Issue 7, Pages 1808, Publisher MDPI

**31. Economic and environmental analysis of converting grid supplied HPS lights to solar PV powered LEDs in street lighting at Khairpur Mirs' Pakistan**

[2016]

**JA Touqeer**, HH Memon, SA Soomro, NA Tunio, *Indian J. Sci. Technol*, Volume 9, Issue 47, Pages 1-6

**32. Economic and Technical study of Hybrid system (Wind-Photovoltaic) Electrification for rural area of Tharparkar district Sindh using HOMER software**

[2016]

Tunio, N. A., Mangrio, Z. A., Hajano, M. A., Soomro, A., & **Jumani, T. A.** (2016). In International Conference on *Ener gy, Environment and Sustainable Development* (Vol. 4).

**33. Energy transition through bioelectricity in Pakistan: Implications for limiting global mean temperature below 1.5° C**

[2023]

MA Raza, MM Aman, NA Tunio, TA Jumani, *Environmental Progress & Sustainable Energy*, e14189

### **34. Modeling Of Intelligent Controllers for Solar Photovoltaic System Under Varying Irradiation Condition**

[2023]

M Khan, MA Raza, TA Jumani, S Mirsaeidi, G Abbas, ED Touti, A Alshahir

#### **CONFERENCES AND SEMINARS**

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##### **First ASIA International Multidisciplinary Conference**

[ Universiti Teknologi Malaysia, 07/05/2017 ]

Session Moderator

##### **Leadership camp**

[ Universitas Indonas, Indonesia , 22/11/2019 ]

Country Representative

##### **Second ASIA International Multidisciplinary Conference**

[ Universiti Teknologi Malaysia,, 09/05/2018 ]

Session Moderator

##### **MATLAB/Simulink for Electrical Engineers**

[ Universiti Teknologi Malaysia, 02/09/2021 ]

Workshop Trainer

##### **Workshop on POWER SIM Library**

[ Electrical Engineering Department, Mehran University of Engineering Technology, Pakistan, 12/03/2022 ]

Trainer and Resource Person

##### **Electronics with Simulink**

[ Electrical Engineering Department, Mehran University of Engineering Technology, Pakistan, 15/03/2022 ]

Trainer and Resource Person

##### **Phython for Beginners**

[ Mehran University SZAB Campus Khairpur Mirs, 02/08/2023 – 03/08/2023 ]

Trainer and Resource Person

##### **MATLAB for Control Engineers - A hands-on experience workshop**

[ Mehran University of Engineering and Technology SZAB Campus Khairpur Mirs, 17/10/2023 – 18/10/2023 ]

Trainer and Resource Person

##### **MATLAB for Absolute Beginners - A hands-on Experience**

[ 24/10/2023 – 25/10/2023 ]

Trainer and Resource Person

#### **SOCIAL AND POLITICAL ACTIVITIES**

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##### **Social Activities**

**General Secretary** International Student Society for Pakistan, Universiti Teknologi Malaysia

(2017-2018)

**President** International Student Society for Pakistan, Universiti Teknologi Malaysia

(2018-2019)

## HONOURS AND AWARDS

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### HONORS/ACHIEVEMENTS

Universiti Teknologi Malaysia

#### Thesis Merit Award

Outstanding performance during Ph.D.

#### HEC Pakistan Scholarship

[ 2017 ]

## AREAS OF INTEREST

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### AREAS OF INTEREST

1. Swarm Intelligence
2. Microgrid Controls
3. Meta-heuristic Techniques
4. Machine Learning based Classification Methods

## REVIEWER

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### JOURNAL REVIEWER

1. IEEE Access
2. Energies
3. Electronics
4. Applied Science
5. International Journal of Ambient Energy

## PROFESSIONAL BODY MEMBERSHIPS

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### MEMBERSHIPS

Registered Engineer in Pakistan Engineering Council (a signatory body of Washington Accord)

## REFERENCES

---

### Muhammad Naveed Aman (Ph.D.)

Assistant Professor, School of Computing, College of Engineering

University of Nebraska-Lincoln, Lincoln NE USA

[naveed.aman@unl.edu](mailto:naveed.aman@unl.edu)

+1-402-472-5109

### Nayyar Hussain Mirjat (Ph.D.)

Associate Professor, Department of Electrical Engineering,

Mehran University of Engineering and Technology, Jamshoro, Pakistan

[nayyar.hussain@faculty.muet.edu.pk](mailto:nayyar.hussain@faculty.muet.edu.pk)

+92-3332622858

### Mohd. Wazir Mustafa (Ph.D.)

Professor, Department of Electrical Engineering

Universiti Teknologi Malaysia, Johor Bahru, Malaysia

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+60-197566600