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I. PROFESSIONAL PROFILE

- **Research**
 - Google Scholar Profile, h-index: 24, i10-index: 39
 - Considerable research publications in the area of power system planning, operation and markets; power and energy systems optimization; renewable energy forecasting (wind and solar); electric vehicle; distribution systems planning and reliability, micro grid and smart grid, and intelligent system applications in power system engineering.
 - Proven technical, academic and leadership skill with 11 awards and honors.
 - Authored more than to 100 professional articles.
 - Best papers award by IEEE.
 - Young Engineer award from The Institute of Electrical Engineers of Japan (IEEJ).
 - Serving/served as PI, Co-PI, and Investigator that include federal and non-federal grants such as NSF Engineering Research Center (ERC), NSF-IUSE.
- **Teaching**
 - Developed total 4 new courses at UTEP in the area of Power & Energy: (1) EE4395 Electric Power Systems (*UG course*), (2) EE5388 Power System Operations (*graduate course*), (3) EE5383 Smart Grid Fundamentals (*graduate course*); and EE5390/IE4395/IE5390/MFG5390 Green Energy Manufacturing
 - Significantly improved student evaluations for teaching as an instructor over the years.
 - Active participation in Center for Excellence in Teaching and Learning.
- **Service and other activities**
 - Guest Editor of Applied Sciences journal.
 - Guest Editor of MDPI *Energies* journal; special issue on Electricity Market
 - Editor of MDPI *Forecasting* journal.
 - Guest Editor of MDPI *Energies* journal; Special Issue Title: “Smart Microgrids: Developing the Intelligent Power Grid of Tomorrow”
 - *Senior member* of IEEE
 - *Vice-Chair*, IEEE PEEC Award Subcommittee
 - *Member*, IEEE PEEC – University Education Activities Subcommittee
 - *Secretary*, IEEE New Product Development (NPD) Committee – Selection & Quality Control Subcommittee
 - Regular reviewer of different IEEE Transactions, Elsevier, and other international journals and conferences

- Member of several IEEE working groups
- Listed in Who's Who in the World

II. EDUCATION

- Ph.D., University of the Ryukyus, Japan, Interdisciplinary Intelligent Systems Engineering (*Electric Power System concentration*), 2005.
- M.E., Asian Institute of Technology, Thailand, Energy Economics and Planning, 2002.
- B.E., Kuvempu University, India, Electrical and Electronics Engineering, 1998.

III. PROFESSIONAL EMPLOYMENT

Full-Time Academic Experience

- University of Texas at El Paso, Tenured Associate Professor, Department of Electrical and Computer Engineering (ECE)
9/2017–Present
- University of Texas at El Paso, Tenure-track Assistant Professor, Department of Electrical and Computer Engineering (ECE)
9/2014–8/2017
- University of Texas at El Paso, Tenure-track Assistant Professor, Department of Industrial, Manufacturing and Systems Engineering (IMSE)
9/2011–8/2014
- University of New Brunswick (UNB), Canada, Postdoctoral Fellow, Department of Electrical and Computer Engineering, *Research Area: Predictive modeling of wind power generation, electricity prices and loads; Soft computing models; Power systems optimization*
1/2011–9/2011
- University of Calgary, Canada, Postdoctoral Fellow, Department of Electrical and Computer Engineering, *Research Area: Wind power forecasting, optimization and integration*
1/2010–1/2011
- University of Tasmania (UTAS), Australia, Research Fellow, Academic Level-A, School of Engineering, *Research Area: Power system load modeling*
2/2008–11/2009
- Yonsei University, South Korea, Research Professor, School of Electrical and Electronic Engineering, *Research Area: Intelligent systems applications to electricity market price prediction; Power system operations*
8/2007–1/2008
- University of the Ryukyus, Japan, JSPS Postdoctoral Fellow, Department of Electrical and Electronics Engineering, *Research area: Electricity Price Forecasting Under Deregulated Market Environment*
11/2005–7/2007

IV. RESEARCH INTERESTS

- Power System Planning, Operations, and Control
- Smart Grid and Microgrid
- Cyber Physical System (CPS)
- Distributed Energy Resources and Renewables Integration to the Grid
- Distribution network planning and Smart grid technologies (*electric vehicle, wind, and solar integration; distributed optimization and control of distributed energy source; microgrid and prosumers*)

- Predictive Data Analytics; Energy forecasting and optimization (*renewable power generation forecasting, uncertainty estimation; electricity load demand and price forecasting*)
- Artificial Intelligence and Machine Learning Applications to Cyber-Physical Systems
- Optimization of Energy Systems
- Power System Analysis; Simulation and Modeling
- Resilient and Sustainable Energy Systems

V. SELECTED RESEARCH GRANTS

- **NSF: Improving Student Learning in Power Engineering**
Award Number: 2021470; Principal Investigator: Paras Mandal; NSF-DUE; Award Amount: \$120,000
- **NSF Engineering Research Center for Advancing Sustainability through Powered Infrastructure for Roadway Electrification (ASPIRE)**
Award Number: 1941524; Principal Investigator: Regan Zane; Co-Principal Investigator: Soheil Nazarian, Christopher Fawson, Konstantina Gkritza, Qin Lv; Organization: Utah State University; Award Amount: \$3,500,000; [UTEP as subawardee with lead institution Utah State University; UTEP PI/Site Director: Soheil Nazarian, UTEP Co-PIs: Paras Mandal, Bill Tseng, Ivonne Santiago, and Imad Abdallah]
- **NSF Planning Grant: Engineering Research Center for Offshore Wind Energy Center for Infrastructure Resilience, Control, Innovation, and Transmission (OWE-CIRCIT)**
Award Number: 1840424; Principal Investigator: Daniel Kuchma; Co-Principal Investigators: Sanjay Arwade, Aleksandar Stankovic, Paras Mandal, Alison Bates; Award Amount: \$100,000

VI. PUBLICATIONS

Authored more than 100 scientific articles that comprise of journal, conference, symposium, abstract, and workshop/poster.

*: *Corresponding author*; Underlined author(s): student

Book Chapter

P. Mandal*, A. K. Srivastava, T. Senjyu, and M. Negnevitsky, "Electricity Price Forecasting Using Neural Network and Similar Days," *Advances in Electric Power and Energy Systems: Load and Price Forecasting*, Wiley-IEEE Press, July 2017.

Refereed Journal Papers

- [J1]. M. Ahmadi, O. B. Adewuyi, M. S. S. Danish, **P. Mandal**, A. Yona, and T. Senjyu, "Optimum Coordination of Centralized and Distributed Renewable Power Generation Incorporating Battery Storage System into the Electric Distribution Network," *International Journal of Electrical Power & Energy Systems*, Vol. 125, 2021.
- [J2]. E. Galvan, **P. Mandal***, and Y. Sang, "Networked Microgrids With Roof-Top Solar PV and Battery Energy Storage to Improve Distribution Grids Resilience to Natural Disasters," *International Journal of Electrical Power & Energy Systems*, Vol. 123, December 2020.
- [J3]. R. Shigenobu, A. Nakadomari, Y-Y Hong, **P. Mandal**, H. Takahashi, and T. Senjyu, "Optimization of Voltage Unbalance Compensation by Smart Inverter," *Energies*, Vol. 13, No. 18, 2020 [Section: *Smart Grids and Microgrids*]
- [J4]. S. M. S. Danish, M. Ahmadi, M. S. S. Danish, **P. Mandal**, A. Yona, and T. Senjyu, "A Coherent Strategy for Peak Load Shaving Using Energy Storage Systems," *Journal of Energy Storage*, Vol. 32, 2020 <https://doi.org/10.1016/j.est.2020.101823>

- [J5]. Y. Wen, D. AlHakeem, **P. Mandal***, S. Chakraborty, Y-K Wu, T. Senjyu, S. Paudyal, and B. Tseng, "Performance Evaluation of Probabilistic Methods Based on Bootstrap and Quantile Regression to Quantify PV Power Point Forecast Uncertainty," *IEEE Transactions on Neural Networks and Learning Systems*, Vol. 31, No. 4, pp. 1134-1144, 2020 [*Impact factor: 11.683*]
- [J6]. A. Conteh, M. E. Lotfy, O. B. Adewuyi, **P. Mandal**, H. Takahashi, and T. Senjyu, "Demand Response Economic Assessment with the Integration of Renewable Energy for Developing Electricity Markets," *Sustainability*, Vol. 12, No. 7, pp. 2653, 2020.
- [J7]. H. Zaheb, M. S. Danish, T. Senjyu, M. Ahmadi, A. M. Nazari, M. Wali, M. Khosravy, and **P. Mandal**, "A Contemporary Novel Classification of Voltage Stability Indices," *Applied Sciences*, Vol. 10, No. 5, pp. 1639, 2020.
- [J8]. Y. Huang, R. Shigenobu, A. Yona, **P. Mandal**, Z. Yan, and T. Senjyu, "M-Shape PV Arrangement for Improving Solar Power Generation Efficiency," *Applied Sciences*, Vol. 10, No. 2, pp. 537, 2020.
- [J9]. H. O. R. Howlader, O. B. Adewuyi, Y-Y Hong, **P. Mandal**, A. M. Hemeida, and T. Senjyu, "Energy Storage System Analysis Review for Optimal Unit Commitment," *Energies*, Vol. 13, No. 1, pp. 158, 2020.
- [J10]. O. Adewuyi, M. Ahmadi, I. Olaniyi, T. Senjyu, T. Olowu, and **P. Mandal**, "Voltage Security-Constrained Optimal Generation Rescheduling for Available Transfer Capacity Enhancement in Deregulated Electricity Markets," *Energies*, Vol. 12, No. 22, pp. 4371, 2019.
- [J11]. Y-K Wu, S-M Chang, and **P. Mandal**, "Grid-Connected Wind Power Plants: A Survey on the Integration Requirements in Modern Grid Codes," *IEEE Transactions on Industry Applications*, Vol. 55, No. 6, pp. 5584-5593, 2019.
- [J12]. E. Galvan, **P. Mandal***, S. Chakraborty, and T. Senjyu, "Efficient Energy Management System Using A Hybrid Transactive-Model Predictive Control Mechanism for Prosumer-Centric Networked Microgrids," *Sustainability*, Vol. 1, No. 19, pp. 5436, 2019 [*MDPI Special Issue on Sustainable Electric Power Systems Research*]
- [J13]. K. Kiptoo, O. B. Adewuyi, M. E. Lotfy, T. Senjyu, **P. Mandal**, and M. Abdel-Akher, "Multi-Objective Optimal Capacity Planning for 100% Renewable Energy-based Microgrid Incorporating Demand-side Flexibility Management," *Applied Sciences*, Vol. 9, No. 18, pp. 3855, 2019 [*MDPI Special Issue on Standalone Renewable Energy Systems-Modeling and Controlling*]
- [J14]. S. M. S. Danish, R. Shigenobu, M. Kinjo, **P. Mandal**, N. Krishna, A. M. Hemeida, and Tomonobu Senjyu, "A Real Distribution Network Voltage Regulation Incorporating Auto-Tap-Changer Pole Transformer Multi-Objective Optimization," *Applied Sciences*, Vol. 9, No. 14, pp. 2813, 2019.
- [J15]. A. Conteh, M. Elsayed, K. M. Kipngetich, T. Senjyu, **P. Mandal**, and S. Chakraborty, "An Economic Analysis of Demand Side Management Considering Interruptible Load and Renewable Energy Integration: A Case Study of Freetown Sierra Leone," *Sustainability*, Vol. 11, No. 10, 2019.
- [J16]. A. Aoyagi, R. Isomura, **P. Mandal**, N. Krishna, T. Senjyu and H. Takahashi, "Optimum Capacity and Placement of Storage Batteries Considering Photovoltaics," *Sustainability*, Vol. 11, No. 9, 2019 [*MDPI, Special Issue on Sustainable Electric Power Systems Research*]
- [J17]. M. S.S. Danish, T. Senjyu, S.M.S. Danish, N.R. Sabory, K. Narayanan, and **P. Mandal**, "A Recap of Voltage Stability Indices in the Past Three Decades," *Energies*, Vol. 12, No. 8, 2019 [*MDPI, Special Issue on Advanced Techniques for Electronic Power and Energy Systems*]
- [J18]. T. G. Paul, S. J. Hossain, S. Ghosh, **P. Mandal**, and S. Kamalasan, "A Quadratic Programming Based Optimal Power and Battery Dispatch for Grid Connected Micro Grid," *IEEE Transactions on Industry Applications*, Vol. 54, No. 2, pp. 1793-1805, 2018.

- [J19]. R. Shigenobu, M. Kinjo, **P Mandal**, A. Howlader, and T. Senjyu, "Optimal Operation Method for Distribution Systems Considering Distributed Generators Impacted with Reactive Power Incentive," *Applied Sciences*, Vol. 8, No. 8, 2018. [MDPI, Special Issue on Renewable Energy 2018]
- [J20]. C. A.G. Rosales, M.A. Garcia, H. Kim, L.A. Chavez, D. Hodges, **P. Mandal**, Y. Lin, and B. Tseng, "3D printing of Shape Memory Polymer (SMP)/Carbon Black (CB) nanocomposites with electro-responsive toughness enhancement," *Materials Research Express*, Vol. 5, No. 6, 2018.
- [J21]. M. M. Sediqi, A.M. Ibrahimi, M.S.S. Danish, T. Senjyu, S. Chakraborty, and **P. Mandal**, "An Optimization Analysis of Cross-border Electricity Trading between Afghanistan and its Neighbor Countries," *IFAC-Papers Online*, Vol. 51, No. 28, pp. 25-30, 2018 [Special Issue on Control and Operation of Power System; Elsevier]
- [J22]. E. Galvan, **P. Mandal***, A. U. Haque, and B. Tseng, "Optimal Placement of Intermittent Renewable Energy Resources and Energy Storage System in Smart Power Distribution Networks," *Electric Power Components and Systems*, Vol. 45, No. 14, 2017.
- [J23]. R. Misra, S. Paudyal, O. Ceylan, and **P. Mandal**, "Harmonic Distortion Minimization in Power Grids with Wind and Electric Vehicles," *Energies*, Vol. 10, No. 7, 2017.
- [J24]. K. Chalamasetty, **P. Mandal***, and B. Tseng, "SCADA framework incorporating MANET and IDP for cyber security of residential microgrid communication network," *Smart Grid and Renewable Energy*, Vol. 7, No. 3, pp. 104-112, 2016.
- [J25]. F. Shariatzadeh, **P. Mandal**, and A. K. Srivastava, "Demand Response for Sustainable Energy Systems: A Review, Application and Implementation Strategy," *Renewable & Sustainable Energy Reviews*, Vol. 45, pp. 343-350, 2015 (5-Year Impact Factor: 10.093 as of May 2019).
- [J26]. A. Haque, **P. Mandal***, J. Meng, and M. Negnevitsky, "Wind Speed Forecast Model for Wind Farm Based on a Hybrid Machine Learning Algorithm," *International Journal of Sustainable Energy*, Vol. 34, No. 1, pp. 38-51, 2015.
- [J27]. A. Yona, S. Tomonobu, T. Funabashi, **P. Mandal**, and C-H Kim, "Optimization Strategy for an Operational Planning of a Large PV System with Enhanced Electrical Vehicles," *International Journal of Sustainable Energy*, Vol. 34, No. 1, pp. 10-22, 2015.
- [J28]. **P. Mandal***, H. Zareipour, and W. D. Rosehart, "Forecasting Aggregated Wind Power Production of Multiple Wind Farms Using Hybrid Wavelet-PSO-NNs", *International Journal of Energy Research*, Vol. 38, No. 13, pp. 1654-1666, 2014.
- [J29]. A. Yona, T. Senjyu, T. Funabashi, **P. Mandal**, C-H Kim, "Optimizing Re-planning for Smart House Operation Applying Solar Radiation Forecasting," *Applied Sciences*, Vol. 4, No. 3, pp. 366-379, 2014.
- [J30]. A. Haque, M. H. Nehrir, and **P. Mandal**, "A Hybrid Intelligent Model for Deterministic and Quantile Regression Approach for Probabilistic Wind Power Forecasting", *IEEE Transactions on Power Systems*, Vol. 29, No. 4, pp. 1663-1672, 2014.
- [J31]. A. Yona, T. Senjyu, T. Funabashi, **P. Mandal**, and C-H Kim, "Decision Technique of Solar Radiation Prediction Applying Recurrent Neural Network for Short-Term Ahead Power Output of Photovoltaic System," *Smart Grid and Renewable Energy*, Vol. 4, No. 6A, pp. 32-38, 2013.
- [J32]. A. Haque, **P. Mandal***, J. Meng, A. K. Srivastava, B. Tseng, and T. Senjyu, "A Novel Hybrid Approach Based on Wavelet Transform and Fuzzy ARTMAP Network for Predicting Wind Farm Power Production," *IEEE Transactions on Industry Application*, Vol. 49, No. 5, September/October 2013.
- [J33]. **P. Mandal***, A. Haque, J. Meng, A. K. Srivastava, and R. Martinez, "A Novel Hybrid Approach Using Wavelet, Firefly Algorithm, and Fuzzy ARTMAP for Day-Ahead Electricity Price Forecasting," *IEEE Transactions on Power Systems*, Vol. 28, No. 2, May 2013.

- [J34]. **A. Haque, P. Mandal***, M. E. Kaye, J. Meng, L. Chang, and T. Senjyu, "A New Strategy for Predicting Short-Term Wind Speed Using Soft Computing Models," *Renewable & Sustainable Energy Reviews*, Vol. 16, pp. 4563-4572, 2012 (5-Year Impact Factor: 10.093 as of May 2019)
- [J35]. **A. Haque, P. Mandal***, J. Meng, and R. L. Pineda, "Performance Evaluation of Different Optimization Algorithms for Power Demand Forecasting Applications in a Smart Grid Environment," *Procedia Computer Science*, Vol. 12, pp. 320-325, 2012.
- [J36]. **P. Mandal***, **S. T. S. Madhira, A. Haque**, J. Meng, and R. L. Pineda, "Forecasting Power Output of Solar Photovoltaic System Using Wavelet Transform and Artificial Intelligence Techniques," *Procedia Computer Science*, Vol. 12, pp. 332-337, 2012.
- [J37]. P. Areekul, T. Senjyu, H. Toyama, S. Chakraborty, A. Yona, N. Urasaki, **P. Mandal**, and A. Y. Saber, "A New Method for Next-Day Price Forecasting for PJM Electricity Market," *International Journal of Emerging Electric Power Systems*, Vol. 11, No. 2, Article 3, 2010.
- [J38]. A. K. Srivastava, S. R. Rudraraju, **P. Mandal**, J. Solanki, and S. Khushalani, "Price Based Unit Commitment with Arbitrage and Emission Constraints Using Genetic Algorithm," *International Journal on Power System Optimization*, Vol. 2, No. 1, pp. 125-131, 2009.
- [J39]. **P. Mandal***, A. K. Srivastava, T. Senjyu, and M. Negnevitsky, "A New Recursive Neural Network Algorithm to Forecast Electricity Price in PJM Day-Ahead Market," *International Journal of Energy Research*, Vol. 34, No. 6, pp. 507-522, 2009.
- [J40]. **P. Mandal***, A. K. Srivastava, and J-W Park, "An Effort to Optimize Similar Days Parameters for ANN Based Electricity Price Forecasting," *IEEE Transactions on Industry Applications*, Vol. 45, No. 5, pp. 1888-1896, Sept.-Oct. 2009 (2008 Prize Paper Award from the Energy Systems (ES) Committee, IEEE Industry Applications Society (IAS)).
- [J41]. **P. Mandal***, A. K. Srivastava, M. Negnevitsky, and J-W Park, "Sensitivity Analysis of Neural Network Parameters to Improve the Performance of Electricity Price Forecasting," *International Journal of Energy Research*, Vol. 33, No. 1, pp. 38-51, January 2009.
- [J42]. **P. Mandal***, T. Senjyu, N. Urasaki, T. Funabashi, and A. K. Srivastava, "A Novel Approach to Forecast Electricity Price for PJM Using Neural Network and Similar Days Method," *IEEE Transactions on Power Systems*, Vol. 22, No. 4, pp. 2058-2065, November 2007.
- [J43]. **P. Mandal**, T. Senjyu, N. Urasaki, and T. Funabashi, "Electricity Price and Load Short-Term Forecasting Using Artificial Neural Networks," *International Journal of Emerging Electric Power Systems*, Vol. 7, November 2006.
- [J44]. **P. Mandal**, T. Senjyu, N. Urasaki, and T. Funabashi, "A Neural Network Based Several-Hour-Ahead Electric Load Forecasting Using Similar Days Approach," *International Journal of Electric Power and Energy System*, Vol. 28, No. 6, pp. 367-373, July 2006.
- [J45]. **P. Mandal**, T. Senjyu, and T. Funabashi, "Neural Networks Approach to Forecast Several-Hour-Ahead Electricity Prices and Loads in Deregulated Market," *Energy Conversion and Management*, Vol. 47, Issues 15-16, Pages 2128-2142, September 2006 (5-Year Impact Factor: 6.161 as of May 2019).
- [J46]. T. Senjyu, **P. Mandal**, K. Uezato, and T. Funabashi, "Next Day Load Curve Forecasting Using Hybrid Correction Method," *IEEE Transactions on Power Systems*, Vol. 20, No. 1, pp. 102-109, February 2005.
- [J47]. T. Senjyu, **P. Mandal**, K. Uezato, and T. Funabashi, "Next Day Load Curve Forecasting Using Recurrent Neural Network Structure," *IEE Proc. - Gener. Transm. Distrib*, Vol. 151, No. 3, pp. 388-394, May 2004.
- [J48]. T. Senjyu, **P. Mandal**, K. Uezato, and T. Funabashi, "Three-hour-ahead Load Forecasting Using Hybrid Correction Method," *Electric Power Components and Systems*, Vol. 32, No. 4, pp. 337-352, April 2004.

Conference Papers

- [C1]. Y. Tetsuya, M. Sugimura, **P. Mandal**, T. Senjyu, A. Hemeida, and H. Takahashi, "Optimal Operation Plan for Renewable Energy and CCHP in Smart City," in *Proc. 2020 IEEE TENCON, IEEE Region 10 Conference*, November 16-19, 2020 (*accepted*)
- [C2]. L. Liu, T. Senjyu, T. Kato, **P. Mandal**, A. M. Hemeida, and A. Howlader, "Renewable Energy Power System Frequency Control by Using PID Controller and Genetic Algorithm," in *Proc. 2020 IEEE PES Asia-Pacific Power and Energy Engineering Conference (APPEEC)*, September 20-23, 2020.
- [C3]. D. A. Rosa de Jesus, **P Mandal***, Y-K Wu, and T Senjyu, "Deep Learning Ensemble Based New Approach for Very Short-Term Wind Power Forecasting," in *Proc. 2020 IEEE Power & Energy Society General Meeting (PESGM)*, August 2-6, 2020.
- [C4]. Y. Wen, D. AlHakeem, **P. Mandal***, S. Chakraborty, Y-K Wu, T. Senjyu, S. Paudyal, and B. Tseng, "Performance Evaluation of Probabilistic Methods Based on Bootstrap and Quantile Regression to Quantify PV Power Point Forecast Uncertainty," in *Proc. 2020 IEEE Power & Energy Society General Meeting (PESGM)*, August 2-6, 2020.
- [C5]. M. Sugimura, T. Senjyu, N. Krishna, **P. Mandal**, M. Abdel-Akher and A. Hemeida, "Sizing and Operation Optimization for Renewable Energy Facilities with Demand Response in Microgrid," in *Proc. 2019 The 20th International Conference on Intelligent System Application to Power Systems, ISAP 2019*, December 10-14, 2019.
- [C6]. L. Liu, T. Senjyu, T. Kato, **P. Mandal**, A. M. Hemeida, M. Abdel-Akher, "Frequency Control Approach by Controlling Output Power of Renewable Energy Sources Considering the Priority of Power Adjustment," in *Proc. IEEE APPEEC 2019, 11th IEEE PES Asia-Pacific Power and Energy Engineering Conference, December 2019*.
- [C7]. D. A. Rosa de Jesus, **P. Mandal***, S. Chakraborty, T. Senjyu, and M. Velez-Reyes, "Data Fusion Based Hybrid Deep Neural Network Method for Solar PV Power Forecasting," in *Proc. 2018 North American Power Symposium (NAPS2019)*, October 13-15, 2019 (*accepted*).
- [C8]. D. A. Rosa de Jesus, **P Mandal***, S. Chakraborty, and T Senjyu, "Solar PV Power Prediction Using A New Approach Based on Hybrid Deep Neural Network," in *Proc. 2019 IEEE Power & Energy Society General Meeting (PESGM)*, August 4-8, 2019.
- [C9]. M.S.S. Danish, H. Matayoshi, H.R. Howlader, S. Chakraborty, **P. Mandal**, and T. Senjyu, "Microgrid Planning and Design: Resilience to Sustainability," in *Proc. 2019 IEEE PES GTD Grand International Conference and Exposition Asia (GTD Asia)*, March 19-23, 2019.
- [C10]. Y-K Wu, S.-M Chang, and **P. Mandal**, "Grid-Connected Wind Power Plants: A Survey on the Integration Requirements in Modern Grid Codes," in *Proc. 2019 IEEE/IAS 55th Industrial and Commercial Power Systems Technical Conference (I&CPS)*, May 5-8, 2019.
- [C11]. H. Aoyagi, S. Chakraborty, **P. Mandal**, R. Shigenobu, A. Conteh, and T. Senjyu, "Unit Commitment Considering Uncertainty of Price-Based Demand Response," in *Proc. 2018 IEEE PES Asia-Pacific Power and Energy Engineering Conference (APPEEC)*, Oct. 7-10 2018.
- [C12]. E. Galvan, **P Mandal***, S. Chakraborty, and A.Y. Saber, "Efficient Transactive Control for Energy Storage Management System in Prosumer-Centric Networked Microgrids," in *Proc. 2018 North American Power Symposium (NAPS2018)*, September 9-11, 2018.
- [C13]. Y. Susowake, A.M. Ibrahim, M.S.S. Danish, T. Senjyu, A.M. Howlader, and **P. Mandal**, "Multi-Objective Design of Power System Introducing Seawater Electrolysis Plant for Remote Island," in *Proc. 2018 IEEE Innovative Smart Grid Technologies-Asia (ISGT Asia)*, October 7-10, 2018.
- [C14]. Y. Susowake, H. Yongyi, T. Senjyu, A.M. Howlader, and **P. Mandal**, "Optimum Operation Plan for Multiple Existing EV Charging Stations," in *Proc. 2018 IEEE PES Asia-Pacific Power and Energy Engineering Conference (APPEEC)*, October 7-10, 2018

- [C15]. M.M. Sediqi, A.M. Ibrahimi, M.S.S. Danish, T. Senjyu, S. Chakraborty, and **P. Mandal**, “An Optimization Analysis of Cross-border Electricity Trading between Afghanistan and its Neighbor Countries,” in *Proc. 10th IFAC Symposium on Control of Power and Energy Systems CPES 2018*, 4–6 September 2018.
- [C16]. A. U. Haque, **P. Mandal**, A. Bhuiya, R. Baker, Member, and B. Tseng, “Suppressing Wind Farm Output Power Fluctuation and Improving Power System Stability Using Battery Energy Storage System,” 2016 CIGRE Canada Conference, Vancouver, BC Canada, October 17-19, 2016.
- [C17]. T. Paul, S. Kamalasadana, **P. Mandal**, S. Ghosh, “A Quadratic Programming Based Optimal Power and Battery Dispatch for Grid Connected Micro Grid,” in *Proc. 2016 IEEE Industry Applications Society (IAS) Annual Meeting, IAS2016, October 2-6, 2016*.
- [C18]. E. Galvan, **P. Mandal***, M. Velez-Reyes, and S. Kamalasadana, “Transactive Control Mechanism for Efficient Management of EVs Charging in Transactive Energy Environment,” in *Proc. 2016 North American Power Symposium (NAPS2016)*, September 18-20, 2016.
- [C19]. S. M. Sajjadi, **P. Mandal***, B. Tseng, and M. Velez-Reyes, “Transactive Energy Market in Distribution Systems: A Case Study of Energy Trading Between Transactive Nodes,” in *Proc. 2016 North American Power Symposium (NAPS2016)*, September 18-20, 2016.
- [C20]. V. M. Loya-Garnica, B. Tseng, C-C Huang, R. Chiou, **P. Mandal**, L. M. Rodriguez and K. Dominguez, “A Cell Formation Algorithm for Sequential Processes with Alternative Machine Selection in the Automotive Lighting Industry,” in *Proc. 2016 Industrial and Systems Engineering Research Conference (ISERC)*, May 21-24, 2016.
- [C21]. G. K. Chalamasetty, **P. Mandal***, and B. Tseng, “Secure SCADA Communication Network for Detecting and Preventing Cyber-Attacks on Power Systems,” in *Proc. 2016 Clemson University Power System Conference, PSC 2016, Co-sponsored by IEEE*, Clemson University, Clemson, SC, March 8-11, 2016.
- [C22]. H. Tahara, N. Urasaki, T. Senjyu, and **P. Mandal**, “Optimal Schedule of Electric Vehicle Charging Station Considering Uncertainty of Solar Insolation,” in *Proc. 2015 IEEE Intl Future Energy Electronics Conference*, November 1-4, 2015.
- [C23]. E. Galvan, **P. Mandal***, B. Tseng, and M. Velez-Reyes, “Energy Storage Dispatch Using Adaptive Control Scheme Considering Wind-PV in Smart Distribution Network,” in *Proc. 47th North American Power Symposium (NAPS2015)*, IEEE-PES, September 2015.
- [C24]. R. M. Peri, **P. Mandal***, A. U. Haque, and B. Tseng, “Very Short-Term Prediction of Wind Farm Power: An Advanced Hybrid Intelligent Approach,” in *Proc. 2015 IEEE Industrial Application Society (IAS) Annual Meeting*, October 2015.
- [C25]. D. AlHakeem, **P. Mandal***, A. Haque, A. Yona, T. Senjyu, and B. Tseng, “A New Strategy to Quantify Uncertainties of Wavelet-GRNN-PSO Based Solar PV Power Forecasts Using Bootstrap Confidence Intervals,” in *Proc. 2015 IEEE Power & Energy Society General Meeting, PESGM 2015*, Denver, July 26-30, 2015.
- [C26]. S. H. Elyas, **P. Mandal***, A. Haque, A. Giani, and B. Tseng, “A New Hybrid Optimization Algorithm for Solving Economic Load Dispatch Problem with Valve-Point Effect,” in *Proc. 46th North American Power Symposium (NAPS2014)*, September 2014.
- [C27]. A. U. Haque, **P. Mandal**, H. M. Nehrir, A. Bhuiya, and R. Baker, “A Hybrid Intelligent Framework for Wind Power Forecasting Engine,” *14th Electrical Power and Energy Conference 2014*, IEEE, Calgary, Canada.
- [C28]. E. D. Smith, B. Tseng, **P. Mandal**, and A. Akundi, “Attributions Biases in Mentoring & Teaching Green Energy Manufacturing,” *Alliance of Hispanic Serving Institutions Educators (AHSIE), 6th Annual HSI/Title V Best Practice Conference*, University of La Verne in La Verne, CA, 2014.
- [C29]. B. Tseng, R. Chiou, **P. Mandal**, E. D. Smith, R. Belu, and O. Salcedo, “Fusing Green Energy into Manufacturing Engineering Education to Cultivate Technical Success,” *121st ASEE Annual Conference & Exposition, American Society for Engineering Education*, Indianapolis, IN, 2014.

- [C30]. **P. Mandal***, **A. Haque**, **S. T. S. Madhira**, and **D. I. Al-Hakeem**, “Applying Wavelets to Predict Solar PV Output Power Using Generalized Regression Neural Network,” in *Proc. 45th North American Power Symposium (NAPS2013), IEEE-PES*, September 2013.
- [C31]. **A. Haque**, M. H. Nehrir, and **P. Mandal**, “Solar PV Power Generation Forecast Using a Hybrid Intelligent Approach,” in *Proc. 2013 IEEE Power & Energy Society General Meeting*, July 2013.
- [C32]. B. Tseng, R. Chiou, **P. Mandal**, C. Garcia, N. Espino, Z. Hu, D. Romo, and M. Corella, “Cyber Based Layer Manufacturing with an On-line Testing System,” *Proceedings of the American Society for Engineering Education 2013 Conference*, Atlanta, GA, June 23-26, 2013.
- [C33]. B. Tseng, L. Zheng, K. Fraser, J. C. Ho, J. Mendez, N. Espino, **P. Mandal**, C. C. Huang, and R. Chiou, “E-quality Control in Solar Panel Inspection Using Photometric Stereo Reconstruction and 3D Measurement,” *Proceedings of the Industrial Systems Engineering Research 2012 Conference*, San Juan, Puerto Rico, May 18-22, 2013.
- [C34]. B. Tseng, N. Vargas-Hernandez, R. Chiou, **P. Mandal**, K. V. Koppella, M. Gonzalez, and Mendez, J.V., “Integrating Rapid Manufacturing with Cyber Facility and Tutor System into Engineering Education,” *Proceedings of the American Society for Engineering Education 2012*, San Antonio, TX, June 10-13, 2012.
- [C35]. B. Tseng, F. Jiang, C. C. Huang, R. Chiou, **P. Mandal**, M. Gonzalez, K. V. Koppella, and J. Saavedra, J., “Quality Control of Bio Scaffold Using Intelligent Data Mining,” *Proceedings of the Industrial Systems Engineering Research 2012*, Orlando, FL, May 19-23, 2012.
- [C36]. B. Tseng, J. Zheng, V. J. Mendez, **P. Mandal**, K. V. Koppella, C. C. Huang, R. Chiou, and C. Garcia, “E-quality Control in Solar Panel Inspection Using Photometric Stereo Reconstruction,” *Proceedings of the Industrial Systems Engineering Research 2012*, Orlando, FL, May 19-23, 2012.
- [C37]. B. Tseng, N. Vargas-Hernandez, R. Chiou, **P. Mandal**, M. Gonzalez, J. V. Mendez, and J. Saavedra, “Cyber Based Layer Manufacturing with Virtual Facility,” *Proceedings of the 2012 ASEE Gulf-Southwest Annual Conference*, University of Texas, El Paso, TX, April 4-6, 2012.
- [C38]. **A. Haque**, **P. Mandal***, J. Meng, and R. L. Pineda, “Performance Evaluation of Different Optimization Algorithms for Power Demand Forecasting Applications in a Smart Grid Environment,” in *Proc. Complex Adaptive Systems Conference* November 2012. (*Recipient of Best Theoretical Award – 1st Runner-Up*).
- [C39]. **P. Mandal***, **S. T. S. Madhira**, **A. Haque**, J. Meng, and R. L. Pineda, “Forecasting Power Output of Solar Photovoltaic System Using Wavelet Transform and Artificial Intelligence Techniques,” in *Proc. Complex Adaptive Systems Conference*, November 2012.
- [C40]. **A. Haque**, R. Errouissi, **P. Mandal**, E. G. Castillo, J. Meng, and W. T. Walsh, “Real Time Implementation of Wind Power Forecasting,” *CanWEA 28th Annual Conference and Exhibition*, October 14-17, 2012, Toronto, ON, Canada.
- [C41]. A. Yona, T. Funabashi, C-H Kim, and **P. Mandal**, “Operational Planning Strategy Applying Demand Response to Large PV/Battery System,” in *Proc. 2012 International Conference on Renewable Energy Research and Applications (ICRERA)*, November 2012.
- [C42]. **A. Haque**, **P. Mandal***, J. Meng, A. K. Srivastava, B. Tseng, and T. Senjyu, “A Novel Hybrid Approach Based on Wavelet Transform and Fuzzy ARTMAP Network for Predicting Wind Farm Power Production”, in *Proc. 2012 IEEE Industrial Application Society (IAS) Annual Meeting*, October 2012.
- [C43]. **P. Mandal***, **A. Haque**, J. Meng, R. Martinez, and A. K. Srivastava, “A Hybrid Intelligent Algorithm for Short-Term Energy Price Forecasting in the Ontario Market” in *Proc. 2012 IEEE Power & Energy Society General Meeting*, July 2012.
- [C44]. **H. Y. See Tao**, A. K. Srivastava, R. L. Pineda, and **P. Mandal***, “Wind Power Generation Impact on Electricity Price in ERCOT”, in *Proc. 2012 IEEE Power & Energy Society General Meeting*, July 2012.

- [C45]. **A. Haque, P. Mandal**, M. E. Kaye, J. Meng, and L. Chang, “A New Strategy for Wind Speed Forecasting Using Hybrid Intelligent Models,” in *Proc. 25th Annual Canadian Conference on Electrical and Computer Engineering*, April 2012.
- [C46]. **A. Haque, P. Mandal**, M. E. Kaye, J. Meng, and L. Chang, “Short-Term Wind Speed Forecasting Using Soft Computing Models,” *CanWEA 27th Annual Conference and Exhibition*, Vancouver, BC, Canada, October 3-6, 2011.
- [C47]. S. S. Soman, H. Zareipour, O. Malik, and **P. Mandal**, “A Review of Wind Power and Wind Speed Forecasting Methods With Different Time Horizons,” in *Proc. 42nd North American Power Symposium (NAPS), NAPS2010 IEEE-PES*, September 2010.
- [C48]. M. Negnevitsky, **P. Mandal**, and A. K. Srivastava, “Applications of Intelligent Algorithm in Forecasting of Load Demand, Electricity Price, and Wind Power Prediction”, in *Proc. International Conference on Artificial Intelligence in Science and Technology (AISAT)*, Hobart, Australia, November 23-24, 2009.
- [C49]. M. Negnevitsky, **P. Mandal**, and A. K. Srivastava, and, “Machine Learning Applications for Load, Price and Wind Power Prediction in Power Systems”, in *Proc. The 15th International Conference on Intelligent System Application to Power Systems, ISAP2009*, November 2009.
- [C50]. M. Negnevitsky, **P. Mandal**, and A. K. Srivastava, “An overview of Forecasting Problems and Techniques in Power Systems”, in *Proc. 2009 IEEE Power & Energy Society General Meeting*, July 2009.
- [C51]. **P. Mandal***, A. K. Srivastava, and M. Negnevitsky, “Improving Performance of NN Based Electricity Price Forecasting Using Sensitivity Analysis,” in *Proc. 2009 IEEE PES Power Systems Conference and Exposition (PSCE 2009)*, March 2009.
- [C52]. **P. Mandal**, A. K. Srivastava, M. Negnevitsky, and J-W Park, “An Effort to Optimize Similar Days Parameters for ANN Based Electricity Price Forecasting,” in *Proc. 2008 IEEE Industrial Applications Society Annual Meeting*, October 2008.
- [C53]. **P. Mandal***, T. Senjyu, A. Yona, J-W Park, and A. K. Srivastava, “Sensitivity Analysis of Similar Days Parameter for Predicting Short-Term Electricity Price,” in *Proc. 39th North American Power Symposium, NAPS2007*, September 2007.
- [C54]. **P. Mandal***, T. Senjyu, N. Urasaki, A. Yona, T. Funabashi, and A. K. Srivastava, “Price Forecasting for Day-Ahead Electricity Market Using Recursive Neural Network,” in *Proc. 2007 IEEE Power Engineering Society General Meeting*, June 2007.
- [C55]. **P. Mandal***, T. Senjyu, N. Urasaki, T. Funabashi, and A. K. Srivastava, “Short-Term Price Forecasting for Competitive Electricity Market,” in *Proc. 38th North American Power Symposium, NAPS2006*, September 2006.
- [C56]. **P. Mandal***, T. Senjyu, N. Urasaki, T. Funabashi, and A. K. Srivastava, “A Novel Approach to Forecast Day-Ahead Electricity Price Using Artificial Neural Network,” *Young Engineer Poster Competition (YPC), IEEJ Power and Energy Society Annual meeting 2006*, Okinawa, Japan, September 13, 2006 (*Recipient of Young Engineer 2006 Award*).
- [C57]. **P. Mandal***, T. Senjyu, N. Urasaki, T. Funabashi, and A. K. Srivastava, “Electricity Price Forecasting for PJM Day-Ahead Market,” in *Proc. 2006 IEEE PES Power Systems Conference and Exposition, PSCE 2006*, October/November 2006.
- [C58]. **P. Mandal**, T. Senjyu, and T. Funabashi, “Neural Network Models to Predict Short-Term Electricity Prices and Loads,” in *Proc. 2005 IEEE International Conference on Industrial Technology, ICIT 2005*, December 2005.
- [C59]. **P. Mandal**, T. Senjyu, K. Uezato, and T. Funabashi, “Several-Hours-Ahead Electricity Prices and Loads Forecasting Using Neural Networks,” in *Proc. 2005 IEEE Power Engineering Society General Meeting*, June 2005.
- [C60]. **P. Mandal**, T. Senjyu, K. Uezato, and T. Funabashi, “Short-Term Electricity Price and Load Forecasting Using Artificial Neural Network,” in *Proc. IEICE and IEEJ joint conference*, Okinawa, Japan, December 2004.

- [C61]. **P. Mandal**, T. Senjyu, K. Uezato, and T. Funabashi, "Forecasting Several-Hours-Ahead Electricity Demand Using Neural Network," in *Proc. 2004 IEEE International Conference on Electricity Utility Deregulation, Restructuring and Power Technologies*, DRPT-2004, April 2004 (*Recipient of IEEE Excellent Student Award*).
- [C62]. **P. Mandal**, T. Senjyu, K. Uezato, and T. Funabashi, "A Neural Network Approach to Forecast Several-Hours-Ahead Load Forecasting," in *Proc. IEICE and IEEJ joint conference*, September 2003.

Symposium Papers

- [S1]. J. Castro and **P. Mandal***, "Multi-Agent System for Microgrid Energy Management," *The Southwest Emerging Technology Symposium 2018, SETS 2018*, April 2018.
- [S2]. E. Galvan and **P. Mandal***, "Transactive Control for Energy Storage Dispatch in Microgrids," *The Southwest Emerging Technology Symposium 2018, SETS 2018*, April 2018.
- [S3]. M. M. P. Chowdhury, C. Kiekintveld, and **P. Mandal***, "A Green Auction Mechanism for Prioritizing Renewable Energy Sources In Energy Markets," *The Southwest Emerging Technology Symposium, SETS 2017*, El Paso, Texas, April 1, 2017.
- [S4]. R. Villegas and **P. Mandal***, "Smart Residential Microgrid Energy Management System," *The Southwest Emerging Technology Symposium, SETS 2017*, El Paso, Texas, April 1, 2017.
- [S5]. T. Dendup, **P. Mandal***, and B. Tseng, "Hydro Power Status In Bhutan: Overview on An Emerging Sustainable Power Sector," *The Southwest Emerging Technology Symposium, SETS 2017*, El Paso, Texas, April 1, 2017.
- [S6]. G. K. Chalamasetty, **P. Mandal***, and B. Tseng, "Comparison of Two IDP Technologies in Detecting and Preventing Cyber-Attacks on Microgrid Communication Networks," in *Proc. The Southwest Emerging Technology Symposium, SETS 2016*, El Paso, Texas, April 9, 2016.
- [S7]. S. M. Sajjadi, **P. Mandal***, and B. Tseng, "Non-Simultaneous DG and Capacitor Banks Allocation in Distribution Networks Based on Economic Evaluation," in *Proc. The Southwest Emerging Technology Symposium, SETS 2016*, El Paso, Texas, April 9, 2016.
- [S8]. E. Galvan and **P. Mandal***, "Transactive Energy Systems," in *Proc. The Southwest Emerging Technology Symposium, SETS 2016*, El Paso, Texas, April 9, 2016.
- [S9]. L. A. Gutierrez and **P. Mandal***, "Impact of Intermittent Renewable Energy Sources on Power System Analysis," in *Proc. The Southwest Emerging Technology Symposium, SETS 2016*, El Paso, Texas, April 9, 2016.
- [S10]. E. Galvan and **P. Mandal***, "Optimal Operation Strategy for Grid Connected Wind/PV and Energy Storage System," in *Proc. 5th Southwest Energy Science and Engineering Symposium, SESES 2015*, El Paso, Texas, April 4, 2015.
- [S11]. P. Vieira, T. Peres, and **P. Mandal***, "Impact of Distributed Generation on Electric Power System," in *Proc. 5th Southwest Energy Science and Engineering Symposium, SESES 2015*, El Paso, Texas, April 4, 2015.
- [S12]. R. M. Peri, **P. Mandal***, and B. Tseng, "Hybrid Intelligent Method For Very Short-Term Power Output Prediction Of Wind Farm," in *Proc. 5th Southwest Energy Science and Engineering Symposium, SESES 2015*, El Paso, Texas, April 4, 2015.
- [S13]. G. K. Chalamasetty, **P. Mandal***, and B. Tseng, "Cyber Security Model for Power System Based on Game Theory," in *Proc. 5th Southwest Energy Science and Engineering Symposium, SESES 2015*, El Paso, Texas, April 4, 2015.
- [S14]. D. I. AlHakeem, **P. Mandal***, A. Haque, and B. Tseng, "Smart Electricity Market Planning and Operation in a Demand Responsive Environment," in *Proc. 4th Southwest Energy Science and Engineering Symposium, SESES 2014*, Texas, March 22, 2014.

- [S15]. A. Akundi, **P. Mandal***, E. D. Smith, and B. Tseng, “Wind Power Generation Impact on Electricity Market Prices: An Overview,” in *Proc. 4th Southwest Energy Science and Engineering Symposium, SESES 2014*, El Paso, Texas, March 22, 2014.
- [S16]. S. T. S. Madhira, **P. Mandal***, and A. Haque, “A Hybrid Intelligent Method for Predicting Power Output of Solar PV System,” in *Proc. 3rd Southwest Energy Science and Engineering Symposium, SESES 2013*, El Paso, Texas, April 27, 2013.
- [S17]. A. Haque, **P. Mandal***, and B. Tseng, “Wind Speed Prediction Using a Combined Intelligent Approach,” in *Proc. 2nd Southwest Energy Science and Engineering Symposium, SESES 2012*, El Paso, Texas, March 24, 2012.
- [S18]. A. Haque, **P. Mandal***, and B. Tseng, “Short-term Prediction of Wind Farm Power Output using a Hybrid Intelligent Algorithm based on Meteorological Information,” in *Proc. 2nd Southwest Energy Science and Engineering Symposium, SESES 2012*, El Paso, Texas, March 24, 2012.
- [S19]. O. Salomon, **P. Mandal***, and A. Haque, “A Study of Demand Response in Electricity Market under Smart Grid Environment,” in *Proc. 2nd Southwest Energy Science and Engineering Symposium, SESES 2012*, El Paso, USA, March 24, 2012 [*student won 3rd place in poster presentation*]

Abstract Presentation

- [A1]. B. Tseng, E. D. Smith, and **P. Mandal**, “Green Energy Manufacturing (GEM) Technology and Teaching Innovations at the University of Texas at El Paso (UTEP),” *Department of Education, Higher Education Programs (HEP) Project Director’s Meeting*, Washington, D.C. 2013.
- [A2]. E. D. Smith, O. Salcedo, B. Tseng and **P. Mandal**, “Flipped Classes from the Manufacturing and Systems Engineering Perspective,” *Department of Education, Alliance of Hispanic Serving Institutions (HSI) Educators (AHSIE), 5th Annual HSI/Title V Best Practice Conference*, New Jersey City University, NJ, 2013.

Workshop and Poster Presentation

- [WP1]. E. Galvan, **P. Mandal***, B. Tseng, and M. Velez-Reyes, “Energy Storage Dispatch Using Adaptive Control Scheme Considering Wind-PV in Smart Distribution Network,” *Annual Program Workshop, Control at Large Scales: Energy Markets and Responsive Grids, Institute for Mathematics and its Applications (IMA)*, Minneapolis, MN, May 9-13, 2016.
- [WP2]. S. M. Sajjadi, **P. Mandal***, B. Tseng, S. Kamalasadani, and M. Velez-Reyes, “New Hybrid Optimization Algorithm to Improve Reliability and Reduce Losses in Micro-Grid,” *Annual Program Workshop, Control at Large Scales: Energy Markets and Responsive Grids, Institute for Mathematics and its Applications (IMA)*, Minneapolis, MN, May 9-13, 2016.
- [WP3]. A. Aditya, N. Olivares, B. Tseng, and **P. Mandal***, “Smart Campus Security Systems: A Conceptual Framework,” *Internet of Things, Industrial, Manufacturing and Systems Engineering (IMSE) Day III, IMSE Day 2016*, UTEP El Paso Natural Gas Conference Center, April 21, 2016 (*students won 4th place in poster presentation at IMSE2016 day*)
- [WP4]. D. AlHakeem, **P. Mandal***, A. Haque, A. Yona, T. Senjyu, and B. Tseng, “A New Strategy to Quantify Uncertainties of Wavelet-GRNN-PSO Based Solar PV Power Forecasts Using Bootstrap Confidence Intervals,” in *Proc. 2015 IEEE Power & Energy Society General Meeting, PESGM 2015*, Denver, July 26-30, 2015.
- [WP5]. A. Haque, M. H. Nehrir, and **P. Mandal**, “Solar PV Power Generation Forecast Using a Hybrid Intelligent Approach,” in *Proc. 2013 IEEE Power & Energy Society General Meeting*, July 2013.

- [WP6]. **P. Mandal***, A. Haque, J. Meng, R. Martinez, and A. K. Srivastava, “A Hybrid Intelligent Algorithm for Short-Term Energy Price Forecasting in the Ontario Market” in *Proc. 2012 IEEE Power & Energy Society General Meeting*, July 2012.
- [WP7]. H. Y. See Tao, A. K. Srivastava, R. L. Pineda, and **P. Mandal***, “Wind Power Generation Impact on Electricity Price in ERCOT”, in *Proc. 2012 IEEE Power & Energy Society General Meeting*, July 2012.
- [WP8]. O. Salomon, **P. Mandal***, and A. Haque, “A Study of Demand Response in Electricity Market under Smart Grid Environment,” *2nd Southwest Energy Science and Engineering Symposium, SESES 2012*, El Paso, USA, March 24, 2012 (*a recipient of 3rd winner in the student poster competition; Salmon was a graduate student*)
- [WP9]. A. Haque, **P. Mandal**, M. E. Kaye, J. Meng, and L. Chang, “Comparing the performance of three soft-computing algorithms for short-term wind speed forecasting,” *4th Semi-Annual workshop on Control systems, IEEE Montreal section*, Concordia University, Montreal, May 12-13, 2011.
- [WP10]. Khoi Ngo, **P. Mandal***, and M. Negnevitsky, “Forecasting Short-term Electricity Price Using Artificial Neural Network” University of Tasmania, Hobart, TAS, Australia, 2009.

VII. STUDENTS GRADUATED

List of Graduate Students Graduated under my Supervision as an Advisor

Ph.D. Graduated/Under Supervision

1. Dan A Rosa De Jesus (*Ph.D. ongoing*)
2. **Dr. Eric Galvan** (*Ph.D. graduated in Fall 2019*)
3. **Dr. Hebin Luan** (*Ph.D., graduated in Spring 2018*)
4. **Dr. Juan A. Saavedra** (*Ph.D., graduated in Fall 2016*)
5. **Dr. Ashraf Ul Haque** (*Ph.D., graduated in Fall 2012*)

MS (Thesis) Students Graduated

1. Olayinka S. Obafemi (graduated in Spring 2018)
2. Arzhang P. Ghassemi (graduated in Summer 2016)
3. Goutham K. Chalamasetty (graduated in Spring 2016 with Outstanding MSEE Thesis)
4. Donna I. Al-Hakeem (graduated in Fall 2014 with Outstanding MSEE Thesis)

Bachelor of Engineering Honors Degree

1. Ngo Minh Khoi

• *List of UG Research Students*

- Fall 2020: Z. M. Issa, I. Lopez, and T. M. Newbolt
- Spring 2020: L. D. Ramirez, D. Ramirez, M. Martinez, Z. M. Issa, C. Gonzalez, C. Oaxaca Solis, C. Ontiveros,
- Fall 2019: L. D. Ramirez, F. U. G. Chavez
- Summer 2019: K. M. Papadakis, F. U. G. Chavez
- Spring 2019: S. Meraz, O. Quezada Simental
- Summer 2018: Berlanga, J. Castro, G. Fregoso, D. Gonzalez, A. Lopez, J. Saucedo
- Spring 2018: G. Fregoso, Y. De Leon, A. Gallegos, V. Lombrana, J. Castro (presented a paper at SETS 2018), A. Arreguin, and A. Berlanga
- Fall 2017: Berlanga, F. Vasquez, J. Castro, A. Arreguin, C. Chirino, and M. Violante
- Summer 2017: F. Vasquez
- Spring 2017: F. Palacios, A. Arreguin, and Lilia Sanchez
- Fall 2016: A. Chico, A. Arreguin, and J. Santellanes

- Spring 2016:
 - ✓ L. A. Gutierrez, co-authored 1 symposium paper
 - ✓ L. A. Gutierrez and P. Mandal*, “Impact of Intermittent Renewable Energy Sources on Power System Analysis,” The Southwest Emerging Technology Symposium, SETS 2016, El Paso, Texas, April 9, 2016.
- Spring 2015:
 - ✓ P. V. Vierira, co-authored 1 symposium paper
 - ✓ T. A. Peres, co-authored 1 symposium paper

VIII. TEACHING ACCOMPLISHMENTS

Courses Taught at University of Texas at El Paso (Fall 2011 - present)

- EE5383 Smart Grid Fundamentals – Fall 2020, Fall 2019, Fall 2018, Fall 2017, Fall 2016
- EE3385 Energy Conversion – Fall 2020, Fall 2019, Fall 2018,
- EE2350 Electric Circuits-I – Summer 2020, Spring 2019, Spring 2018, Fall 2017, Spring 2017
- EE6195 Doctoral Seminar – Fall 2020, Fall 2019, Fall 2017
- EE5388 Power Systems Operations – Spring 2020, Spring 2019, Spring 2018, Spring 2017, Spring 2016, Spring 2015, Spring 2013, Fall 2012, Fall 2011 (Note: This course was named as *EE5390/SE5390, SE5391 Power System Operations and Markets* in Fall 2011, Fall 2012 and Spring 2013)
- EE4395 Electric Power Systems – Fall 2016, Fall 2015, Spring 2015, Fall 2014
- EE5390/IE4395/IE5390/MFG5390 Green Energy Manufacturing, (*co-teaching*) – Fall 2016, Fall 2015, Fall 2014, Fall 2013
- EE5341, SE5341 Systems Engineering Fundamentals – Spring 2016, Fall 2015, Spring 2015, Fall 2014, Spring 2014, Fall 2013, Spring 2013, Fall 2012, Spring 2012
- SE5390/EE5390 Power System Operations and Markets – Spring 2013, Fall 2012
- SE5391 Power Systems Operations and Markets – Fall 2011
- IE4490 Operations Research-II – Spring 2014

Courses Taught at the University of Tasmania, Australia

- KNE441 Intelligent Systems, Semester-2: 2008 and 2009, undergraduate course (partial teaching)
- KNE441 Intelligent Systems Laboratory, Semester-2: 2008 and 2009
- KNE443 Power System Operation and Control, Sem-1: 2008, undergraduate course (partial teaching)

IX. INVITED TALKS AND PRESENTATIONS

1. **P. Mandal** and E. Galvan, “Resiliency Analysis in Networked-Microgrids Considering DERs,” IEEE PES GM 2020 [*Panelist on Panel Session: Smart Grid Technology, Committee: Energy Development and Power Generation*]
2. **P. Mandal**, “Transactive Energy: A Market-Based Approach to Enable More Dynamic, Interactive, and Intelligent Systems for Smart Distribution Networks,” *seminar jointly organized by Green Energy Management and Smart Grid Research Center (GEMS), Department of Electrical & Computer Engineering, National University of Singapore and IEEE Singapore Power & Energy Chapter and IEEE Singapore Computational Intelligence Chapter and IEEE PES National University of Singapore Student Branch Chapter, 2019.*
3. **P. Mandal**, “Predicting Photovoltaic Power Generation Based on Deep-Learning Algorithm,” IEEE PES GM 2019, Atlanta, GA [*Panelist on Panel Session: Smart Grid Technology, Committee: Energy Development and Power Generation*]

4. **P. Mandal**, "Incentive-Based Control Mechanisms for Smart Transactive Energy Systems," IEEE PES GM 2018, Portland, OR. [Panelist on Panel Session: Contribution for the Development of Smart Grid Technology, Committee: Energy Development and Power Generation]
5. **P. Mandal**, "Transactive Energy: A New Flavor in Distribution Systems," Taipei Tech, Taipei, Taiwan, July 28, 2016.
6. **P. Mandal**, "Distributed Energy Resources and Intelligent Energy Management Systems," National Chung-Cheng University, Chiayi, Taiwan, July 24, 2016.
7. **P. Mandal**, "Power System Planning and Operations Under Smart Grid Paradigm," Research Institute for Manufacturing and Engineering Systems (RIMES), University of Texas at El Paso, El Paso, TX, March 3, 2016.
8. **P. Mandal**, "Transactive Smart Grid," invited talk at Electric Reliability Council of Texas (ERCOT), Taylor, TX, August 20, 2015.
9. **P. Mandal**, "Nepalese Electric Power Sector: A Burden Beyond Bearing," invited talk at the Seventh International Conference on Strategic Partnership Between Diaspora and Homeland, New Mexico State University, Las Cruces, NM, March 21, 2015.
10. **P. Mandal**, "Intelligent Forecasting, Optimization, and Distributed Energy Resources Management in Dynamic Power Market," presented at Sandia National Lab, Albuquerque, NM, January 14, 2015.
11. **P. Mandal**, "Electric Power and Energy Systems Planning," El Paso Electric, El Paso, TX, January 8, 2015.
12. **P. Mandal**, "Electric Power & Energy Systems Engineering," IMSE Advisory Board Meeting, Department of Industrial, Manufacturing & Systems Engineering, UTEP, November 15, 2013.
13. **P. Mandal**, "Forecasting Electricity Price for PJM Day-Ahead Market using Neural Network and Similar Days Method," Department of Electrical and Computer Engineer, University of Calgary, AB, Canada, January 28, 2010.
14. **P. Mandal**, "Short-Term Electricity Price Prediction Using Neural Networks," School of Engineering, University of Tasmania, Australia, September 16, 2008.

X. AWARDS AND HONORS

- Awardee of NSF-IUSE grant to improve power engineering education
- Guest Editor of *Energies* journal (ISSN 1996-1073); special issue on Electricity Markets (2020)
- Guest Editor of the Journal: *Applied Sciences* - Section: Energy; Special Issue title: Emerging Topics on Cyber-Physical Energy Systems Security (2019)
https://www.mdpi.com/journal/applsci/special_issues/CPES
- Awardee of NSF Planning Grant for Engineering Research Center (2018)
- Editorial Board Member of "Forecasting" journal (2018)
- Guest Editor - *Energies* journal (ISSN 1996-1073) Special Issue Title: "Smart Microgrids: Developing the Intelligent Power Grid of Tomorrow"
http://www.mdpi.com/journal/energies/special_issues/smart_microgrids
- Invited talks at (i) National Chung-Cheng University and (ii) Taipei Tech in Taiwan (2016).
- Visiting Professor at National Chung-Cheng University, Chiayi, Taiwan (2016).
- Best paper award: Theoretical Award, 1st runner-up at Complex Adaptive Systems conference, Washington D.C., November 2012.
- Elected to the grade of IEEE Senior Member in March 2012.
- Listed in 2012 AcademicKeys Who's Who in Engineering Higher Education (WWEHE).
- IEEE best paper award: 2008 prize paper award from the Energy Systems (ES) Committee, IEEE Industry Applications Society (IAS).
- Listed in 2007 Edition of Marquis Who's Who in the World.
- Young Engineer award, Young Engineer Poster Competition (YPC), IEEE 2006 Annual Conference of Power and Energy Society, University of the Ryukyus, Japan.

- Japanese Society for the Promotion of Science (JSPS) Fellowship award for the postdoctoral research at the University of the Ryukyus, Japan (November 2005 - July 2007).
- “IEEE Excellent Student Award 2005” presented by IEEE Fukuoka Section.
- Asian Development Bank (ADB, JAPAN) scholarship for Master of Engineering degree, Asian Institute of Technology, Thailand (January 2001 - August 2002).
- Monbukagakusho (Ministry of Education, Govt. of Japan) Scholarship for Ph.D. degree, University of the Ryukyus, Okinawa, Japan (October 2002 - September 2005).
- Dept. of Electrical & Electronics Engineering topper in undergraduate degree (1998).

XI. PROFESSIONAL SERVICES

- *Vice-Chair*, IEEE PEEC Award Subcommittee, 2020
- *Secretary*, IEEE PEEC Award Subcommittee, 2019
- *Secretary-Elect*, IEEE PEEC Award Subcommittee, 2018
- *Secretary*, IEEE New Product Development (NPD) Committee – Selection & Quality Control Subcommittee, 2018
- *Secretary* of IEEE Power & Energy Education Committee (PEEC) – Life Long Learning Subcommittee (LLLSC) 2016 and 2017.
- Technical Session Chair, 2016 PES GM Best Conference Papers Sessions - Electric Vehicles, Energy Storage, Microgrids, and Demand Response.
- Technical Session Chair at 2018 IEEE North American Power Symposium (NAPS), Fargo, ND.
- Technical Session Chair at 2016 IEEE North American Power Symposium (NAPS), Denver, CO.
- Technical Session Chair at 2015 IEEE North American Power Symposium (NAPS), Charlotte, NC.
- Technical Session Chair at 2014 IEEE North American Power Symposium (NAPS), Pullman, WA.
- Served as a Judge for “Student Oral Paper Presentation” at IEEE NAPS2014, NAPS2015, NAPS2016, and NAPS2018.
- Technical Session Chair at Southwest Energy Science and Engineering Symposium (SESES), El Paso, TX, 2014 and 2015.
- Technical Session Chair at Southwest Emerging Technology Symposium (SETS), El Paso, TX, 2018.
- Participant in “*IEEE Power & Energy Education Committee (PEEC)*” meeting at IEEE NAPS, 2015, 2016, 2017, and 2018.
- Participant in “*IEEE Power & Energy Education Committee (PEEC)*” meeting at IEEE PES GM, 2015, 2016, 2017, and 2018.
- Participant in “*Power & Energy Education Committee (PEEC) – Life Long Learning Subcommittee (LLLSC)*” meeting at IEEE PES General Meeting, 2013, 2014, 2015, and 2016.
- Participant in “*Power System Analysis, Computing, and Economics Committee (PSACE) – Intelligent Systems Subcommittee (ISS) working group on Modern Heuristic Optimization*” meeting at 2013 IEEE PES General Meeting, July 23, 2013, Vancouver, BC.
- Served as a Judge for “Student Poster Competition” at 2020 IEEE PES General Meeting (virtual); 2019 IEEE PES General Meeting, Atlanta, GA; 2018 IEEE PES General Meeting, Portland, OR; 2017 IEEE PES General Meeting, Chicago, IL; 2016 IEEE PES General Meeting, Boston, MA; 2015 IEEE PES General Meeting, Denver, CO; 2014 IEEE PES General Meeting, National Harbor, MD; 2013 IEEE PES General Meeting Vancouver, BC; 2012 IEEE PES General Meeting, San Diego, CA; and 2007 IEEE PES General Meeting, Tampa, FL.
- Participant in *Industrial Automation and Control Committee (IACC)* meeting, IEEE IAS annual meeting, Las Vegas, October 2012 and Dallas, October 2015.

- Participant in *PSOC - Electricity Market Economics (EME) Subcommittee meeting*, San Diego, July 2012; Vancouver, BC, July 2013; National Harbor, MD, July 2014; Denver, July 2015.
- Member of the local organizing committee, The 3rd International Conference on Artificial Intelligence in Science and Technology (AISAT 2009), Hobart Australia.

XII. SYNERGISTIC ACTIVITIES

Guest Editor of Journal

- Guest Editor of *Energies* journal (ISSN 1996-1073); special issue on Electricity Market
- Guest Editor of the Journal: Applied Sciences - Section: Energy; Special Issue title: Emerging Topics on Cyber-Physical Energy Systems Security (2019)
https://www.mdpi.com/journal/applsci/special_issues/CPES
- Editorial Board Member of MDPI *Forecasting* journal (ISSN 2571-9394)
- Special Issue Editor of *Energies* journal (ISSN 1996-1073)
— Special Issue Title: “Smart Microgrids: Developing the Intelligent Power Grid of Tomorrow”

Reviewer of Journal

- IEEE Transactions on Power Systems
- IEEE Transactions on Smart Grid
- IEEE Transactions on Sustainable Energy
- IEEE Transactions on Neural Networks and Learning Systems
- IEEE Transactions on Industry Applications
- IEEE Industry Applications Magazine
- IEEE Transactions on Fuzzy Systems
- IET Generation, Transmission & Distribution
- IET Renewable Power Generation
- Energies (MDPI)
- Applied Energy
- The Arabian Journal for Science and Engineering
- International Journal of Electrical Power and Energy Systems
- International Journal of Energy Research
- International Journal of Sustainable Energy
- Renewable and Sustainable Energy Reviews
- Energy Conversion and Management
- Journal of Modern Power Systems and Clean Energy

Reviewer of Conference

- IEEE Power & Energy Society General Meeting
- IEEE Industry Applications Society (IAS) Annual Meeting
- IEEE PES T&D Conference & Exposition
- IEEE PES GTD
- IEEE North American Power Symposium (NAPS)
- Complex Adaptive Systems
- Joint International Conference on Power Electronics, Drives and Energy Systems & 2010 Power India (PEDES 2010)
- The 19th Australasian Universities Power Engineering Conference (AUPEC)

Membership of Professional Societies

- IEEE (*Student Member*, 2004-2005; *Member*, 2006-2011; *Senior Member*, 2012–present)
- IEEE Region: R5 - Southwestern USA, Section: El Paso Section

- IEEE Power Engineering Society (2004–present)
- IEEE Industry Applications Society (2013–present)
- IEEE Young Professionals (2013–present)
- *Member*, American Society for Engineering Education (ASEE) (2012–present)
- *Life Member*, Nepal Engineering Association (NEA)
- *Member*, Nepal Engineering Council (NEC)
- *Member*, Nepal Engineers Association Japan Chapter (*NEA-JC*), 2006
- *Member*, Nepal Engineers Association Bangkok Chapter (*NEA-BC*), 2001/2002

Professional Committee and Sub-committee Membership

- *Senior Member*, IEEE
- *Member*, IEEE Region: R5 - Southwestern USA, Section: El Paso Section
- *Member*, IEEE Power Engineering Society
- *Member*, IEEE Industry Applications Society
- *Member*, IEEE Young Professionals
- *Vice-Chair*, IEEE PEEC Award Subcommittee
- *Secretary*, IEEE New Product Development (NPD) Committee – Selection & Quality Control Subcommittee, 2018
- *Secretary* of IEEE Power & Energy Education Committee (PEEC) – Life Long Learning Subcommittee (LLLSC) 2016 and 2017.
- *Secretary Elect Elect*, PES Student Meeting Activities Subcommittee
- *Member*, CIGRE – International Council on Large Electric Systems, CIGRE-United States National Committee (USNC)
- *Member*, American Society for Engineering Education (ASEE)
- *Life Member*, Nepal Engineers Association (NEA)
- *Member*, Nepal Engineering Council (NEC)
- *Member*, Power System Operation Committee (PSOC) – Electricity Market Economics (EME) Subcommittee
- *Member*, Power System Analysis, Computing, and Economics Committee (PSACE) – Intelligent Systems Subcommittee (ISS) working group on Modern Heuristic Optimization
- *Member*, IEEE Industrial Automation and Control Committee (IACC)
- *Member*, IEEE PES Big Data & Analytics Subcommittee
- *Member*, IEEE Energy Development and Power Generation committee