

Adana Alparslan Turkes Science and Technology University  
Department of Electrical and Electronic Engineering

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Saricam, Adana, 01250, Türkiye

**Office Phone:** +90 (322) 455 00 00 / 2190

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**Research Interests** Electrical Energy and Power Systems, Electric Load Forecasting, Energy Analytics, Artificial Intelligence, and Renewable Energy

**Personal Information**  
**Date&Place of Birth:** Adana, 1987  
**Marital Status:** Married, 2 Children  
**National Service:** Completed in Konya and Edirne  
**Rank&Date of Discharge:** Air Defence Second Lieutenant 30 Nov 2011

**Positions**

<b>Assistant Professor</b>	Jul 2021–Present
Division of Energy and Power Systems, Department of Electrical and Electronic Engineering, Adana Alparslan Turkes Science and Technology University	
<b>Research Assistant Dr (Lecturer)</b>	Sep 2019–Jul 2021
Department of Electrical and Electronic Engineering, Adana Alparslan Turkes Science and Technology University	
<b>FDP<sup>1</sup> Research Assistant</b>	Mar 2017–Sep 2019
Department of Electrical and Electronic Engineering, Adana Alparslan Turkes Science and Technology University	
<b>FDP Research Assistant (Secondment)</b>	Jul 2013–Mar 2017
Department of Electrical and Electronics Engineering, Cukurova University	
<b>FDP Research Assistant</b>	Feb 2013–Jul 2013
Department of Electrical and Electronic Engineering, Adana Science and Technology University	
<b>Service and Commissioning Engineer</b>	Apr 2012–Feb 2013
MTU <sup>2</sup> Onsite Energy South Anatolia Region, Rolls-Royce Solutions Energy, Marine, and Defence Inc. Rolls-Royce Solutions Türkiye	

<sup>1</sup>FDP: Faculty Development Programme

<sup>2</sup>MTU: Motoren und Turbinen Union GmbH

	<b>Electrical Maintenance Engineer</b>	Jan 2012–Apr 2012
	Sanko Textile Trading Co., Sanko Group	
	<b>Electrical Engineer (Officer Cadet)</b>	Mar 2011–Dec 2011
	Air Defence Artillery Command and Military Engineering Branch, 4th Mechanised Infantry Brigade, 2nd Corps of the 1st Army, Land Forces Command of Turkish Armed Forces	
<b>Education</b>	<b>Cukurova University</b> , Adana, Türkiye	
	<b>PhD</b> , Electrical and Electronic Engineering	Sep 2019
	• Thesis Title: <i>Research and Application of Real-Time Short-Term Electrical Energy Consumption Forecasting Using Artificial Intelligence Based Techniques</i>	
	<b>MSc</b> , Electrical and Electronic Engineering	Jan 2015
	• Thesis Title: <i>Developing a Software Program to Determine the Optimal Capacity Rating of Cogeneration and Trigenation Plants Driven by Gas Engines for Unlicensed Generation of Electricity</i>	
	<b>BSc</b> , Electrical and Electronic Engineering	Sep 2010
	<b>CEAS Anatolian High School</b> , Adana, Türkiye	
	<b>High School Education</b> , Sciences,	Jun 2004
<b>Honours &amp; Grants</b>	<b>Erasmus+ Staff Mobility Grant (€1,125)</b>	May 2023
	Training Subject: Microgrids Host: Prof. Juan C. Vasquez The Centre for Research on Microgrids (CROM), Department of Energy Aalborg University, Aalborg, Denmark	
	<b>Erasmus+ Staff Mobility Grant (€1,538)</b>	Apr 2018
	Training Subject: Electric Load Forecasting Host: Dr Jethro Browell Department of Electronic and Electrical Engineering, University of Strathclyde, Glasgow, UK	
	<b>TUBITAK Scholarship (₺5,630)</b>	Apr 2014–Jun 2015
	Project Number: EEEAG-113E769	
	<b>Erasmus Student Exchange Grant (€3,000)</b>	Aug 2007–Jan 2008
	Department of Electrical Engineering, Linköping Institute of Technology, Linköping University, Linköping, Sweden	

**Publications in  
SCIE and SSCI**

1. Ozdemir, A. C., Bulus, K., and **Zor, K.** Medium- to long-term nickel price forecasting using LSTM and GRU networks. *Resources Policy*, 78:102906, 2022. DOI: 10.1016/j.resourpol.2022.102906
2. Celik, O., **Zor, K.**, Tan, A., and Teke, A. A Novel Gene Expression Programming-Based MPPT Technique for PV Micro-Inverter Applications under Fast-Changing Atmospheric Conditions. *Solar Energy*, 239:268–282, 2022. DOI: 10.1016/j.solener.2022.05.012
3. **Zor, K.**, Celik, O., Timur, O., and Teke, A. Short-Term Building Electrical Energy Consumption Forecasting by Employing Gene Expression Programming and GMDH Networks. *Energies*, 13(5):1102, 2020. DOI: 10.3390/en13051102
4. Teke, A., **Zor, K.**, and Timur, O. A simple methodology for capacity sizing of cogeneration and trigeneration plants in hospitals: A case study for a university hospital. *Journal of Renewable and Sustainable Energy*, 7(053102):1–15, 2015. DOI: 10.1063/1.4930064

**Publications in  
ESCI and  
Scopus**

1. Timur, O., **Zor, K.**, Celik, O., Teke, A., and Ibrikci, T. Application of Statistical and Artificial Intelligence Techniques for Medium-Term Electrical Energy Forecasting: A Case Study for a Regional Hospital. *Journal of Sustainable Development of Energy, Water and Environment Systems*, 8:520–536, 2020. DOI: 10.13044/j.sdewes.d7.0306

**Book Chapters**

1. **Zor, K.** and Celik, O. An Application of Different Approaches to Missing Data for Electric Load Forecasting by Using an Advanced Gene Expression Programming Algorithm. *Advances in Engineering Research, Nova Science Publishers, New York*, 44:223–240, 2021. ISBN: 978-1-53619-950-5

**International  
Conference  
Publications**

1. Yorat, E., **Zor, K.**, Ozbek, N. S. and Saribulut, L. Day-Ahead Electricity Price Forecasting Using Artificial Intelligence-Based Algorithms. *2023 International Conference on Innovation and Intelligence for Informatics, Computing, and Technologies (3ICT2023)*, Nov 20–21, 2023. (Zallaq, Bahrain) **\*Under Review**
2. Tolun, G. G., **Zor, K.**, and Kaplan, Y. A. Daily Global Solar Irradiation Prediction of a University Campus via a Hybrid AI-Based Method. *Digital Proceedings of the 18th Conference on Sustainable Development of Energy, Water and Environment Systems (SDEWES2023)*, Sep 24–29, 2023. (Dubrovnik, Croatia)
3. Tolun, O. C., **Zor, K.**, and Tutsoy, O. Electric Vehicle Charging Demand Prediction Using a Novel Machine Learning-Based Technique. *Digital Proceedings of the 18th Conference on Sustainable Development of Energy, Water and Environment Systems (SDEWES2023)*, Sep 24–29, 2023. (Dubrovnik, Croatia)

4. **Zor, K.** and Bulus, K. A Benchmark of GRU and LSTM Networks for Short-Term Electric Load Forecasting. *2021 International Conference on Innovation and Intelligence for Informatics, Computing, and Technologies (3ICT2021)*, Sep 29–30, 2021. DOI: 10.1109/3ICT53449.2021.9581373 (Zallaq, Bahrain)
5. **Zor, K.** and Celik, O. Short-Term Nonindustrial Reactive Power Forecasting. *17th International Conference of Young Scientists on Energy and Natural Sciences Issues (CYSENI2021)*, (ISSN: 1822-7554):478–487, Mar 24–28, 2021. (Kaunas, Lithuania)
6. Celik, O. and **Zor, K.** Effects of MPPT Parameters on the Performance of Photovoltaic Inverters. *17th International Conference of Young Scientists on Energy and Natural Sciences Issues (CYSENI2021)*, (ISSN: 1822-7554):72–81, Mar 24–28, 2021. (Kaunas, Lithuania)
7. Cetin Tas, I. and **Zor, K.** A Prediction of Building Electrical Energy Demand by Using ANN and SVM. *17th International Conference of Young Scientists on Energy and Natural Sciences Issues (CYSENI2021)*, (ISSN: 1822-7554):381–389, Mar 24–28, 2021. (Kaunas, Lithuania)
8. **Zor, K.**, Timur, O., Celik, O., Yildirim, H. B., and Teke, A. Very Short-Term Electrical Energy Consumption Forecasting of a Household for the Integration of Smart Grids. *Official Conference Proceedings of the European Conference on Sustainability, Energy & the Environment 2018 (ECSEE2018)*, (ISSN: 2188-1146):1–14, Jul 6–7, 2018. (Brighton, UK)
9. Celik, O., Tan, A., **Zor, K.**, and Teke, A. Optimal Design and Analysis of Single-Stage Flyback PV Micro-Inverter. *Official Conference Proceedings of the European Conference on Sustainability, Energy & the Environment 2018 (ECSEE2018)*, (ISSN: 2188-1146):103–115, Jul 6–7, 2018. (Brighton, UK)
10. Timur, O., **Zor, K.**, Celik, O., and Teke, A. Very Short-Term Internet of Things Based Forecasting of Air Conditioning Loads: A Case Study for a Server Room in a Hospital. *Proceedings of the 2nd International Conference on Theoretical and Applied Computer Science and Engineering (ICTACSE2018)*, (ISBN:978-605-9546-12-6):22–25, Jun 29–30, 2018. (Istanbul, Türkiye)
11. Timur, O., **Zor, K.**, Celik, O., and Teke, A. Development of an Intelligent Energy Measurement Device for Buildings. *Proceedings of the 2nd International Conference on Theoretical and Applied Computer Science and Engineering (ICTACSE2018)*, (ISBN:978-605-9546-12-6):16–21, Jun 29–30, 2018. (Istanbul, Türkiye) **\*Best Paper Award**
12. **Zor, K.**, Celik, O., Timur, O., Yildirim, H. B., and Teke, A. Simple Approaches to Missing Data for Energy Forecasting Applications. *Proceedings of the 16th International Conference on Clean Energy (ICCE2018)*, (FORC-03):1–4, May 9–11, 2018. (Gazimağusa, Turkish Republic of Northern Cyprus)

13. **Zor, K.**, Timur, O., Celik, O., Yildirim, H. B., and Teke, A. Interpretation of Error Calculation Methods in the Context of Energy Forecasting. *Digital Proceedings of the 12th Conference on Sustainable Development of Energy, Water and Environment Systems (SDEWES2017)*, (0722):1–9, Oct 4–8, 2017. (Dubrovnik, Croatia)
14. Timur, O., **Zor, K.**, Celik, O., Yildirim, H. B., and Teke, A. Design and Implementation of Smart Energy Measurement Plug in Smart Buildings. *Digital Proceedings of the 12th Conference on Sustainable Development of Energy, Water and Environment Systems (SDEWES2017)*, (0732):1–12, Oct 4–8, 2017. (Dubrovnik, Croatia)
15. Celik, O., Tan, A., **Zor, K.**, Timur, O., Yildirim, H. B., and Teke, A. Comparative Investigation of Single-Stage and Multi-Stage Grid-Tie Micro-Inverters. *Digital Proceedings of the 12th Conference on Sustainable Development of Energy, Water and Environment Systems (SDEWES2017)*, (0735):1–6, Oct 4–8, 2017. (Dubrovnik, Croatia)
16. **Zor, K.**, Timur, O., and Teke, A. A State-of-the-Art Review of Artificial Intelligence Techniques for Short-Term Electric Load Forecasting. *Proceedings of the 6th International Youth Conference on Energy (IYCE2017)*, 1–6, Jun 21–24, 2017. DOI: 10.1109/IYCE.2017.8003734 (Budapest, Hungary)
17. **Zor, K.**, Celik, O., and Teke, A. Techno-Economic Analysis of a Grid-Connected Hybrid Biogas/Photovoltaic Power Generation System in the Mediterranean Region. *Official Conference Proceedings of the European Conference on Sustainability, Energy & the Environment 2016 (ECSEE2016)*, (ISSN: 2188-1146):1–10, Jul 7–10, 2016. (Brighton, UK)
18. **Zor, K.**, Teke, A., and Timur, O. Developing a Software Program to Determine the Optimal Capacity Rating of Gas Engine Based Cogeneration and Trigeneration Plants for Unlicensed Generation of Electricity. *Digital Proceedings of the 10th Conference on Sustainable Development of Energy, Water and Environment Systems (SDEWES2015)*, (0695):1–12, Sep 27–Oct 2, 2015. (Dubrovnik, Croatia)
19. **Zor, K.** and Teke, A. Onsite Energy Production with Cogeneration Plants Driven by Reciprocating Gas Engines. *Digital Proceedings of the 1st South East European Conference on Sustainable Development of Energy, Water and Environment Systems (SEE SDEWES Ohrid 2014)*, (0237):1–9, Jun 29–Jul 3, 2014. (Ohrid, North Macedonia)

#### Other Journal Publications

1. Timur, O., **Zor, K.**, Celik, O., and Teke, A. Enhancement of a Low-Cost Intelligent Device for Improving Energy Efficiency in Buildings. *Communications Faculty of Sciences University of Ankara Series A2–A3: Physical Sciences and Engineering*, 60(2):103–128, Nov 2018.
2. Teke, A., Timur, O., and **Zor, K.**. Calculating Payback Periods for Energy Efficiency Improvement Applications at a University Hospital. *Cukurova University Journal of the Faculty of Engineering and Architecture*, 30(1):41–56, Jun 2015.

## Other Conference Publications

1. Buluş, K. and **Zor, K.** A Hybrid Deep Learning Algorithm for Short-Term Electric Load Forecasting. *The 29th IEEE Conference on Signal Processing and Communications Applications (SIU2021)*, 9–11 Jun 2021. DOI: 10.1109/SIU53274.2021.9477869 (Istanbul, Türkiye)
2. **Zor, K.**, Teke, A., Celik, O., and Latran, M. B. Türkiye’de Gaz Motorlu Kojenerasyon ve Trijenerasyon Santralleri ile Elektrik Enerjisi Üretimi. *IV. Elektrik Tesisat Ulusal Kongre ve Sergisi*, (612):189–195, Oct 21–24, 2015. (Izmir, Türkiye)
3. Latran, M. B., Teke, A., and **Zor, K.** Akıllı Eviriciler ile Yenilenebilir Enerji Tabanlı Dağıtık Üretim Sistemlerinin Akıllı Şebekelere Entegrasyonu. *IV. Elektrik Tesisat Ulusal Kongre ve Sergisi*, (612):246–255, Oct 21–24, 2015. (Izmir, Türkiye)
4. **Zor, K.**, Teke, A., and Tümay, M. Biyokütle ve Katı Atıkların Yakıt Olarak Kullanıldığı Gaz Motorlu Kojenerasyon Santralleri ile Yenilenebilir Enerji Üretimi. *VIII. Yenilenebilir Enerji Kaynakları Sempozyumu (YEKSEM 2015)*, (610):91–95, Oct 15–16, 2015. (Adana, Türkiye)
5. **Zor, K.** and Teke, A. Current Status and Operation Modes of Cogeneration and Trigeneration Plants Driven by Gas Engines. *Proceedings of the 21st International Energy and Environment Fair and Conference (ICCI 2015)*, 91–94, May 6–8, 2015. (Istanbul, Türkiye)

## Managed Master’s Theses

### Supervisions

1. Atalay, B. A. *Hydroelectric Power Forecasting via AI-Based Algorithms*. MSc Thesis, Department of Electrical and Electronic Engineering, Institute of Graduate School, Adana Alparslan Türkeş Science and Technology University, 2024. (Adana, Türkiye)

### Co-Supervisions

1. Abdalla, E. *Deep Learning-Based Daily Solar Irradiation Prediction for Adana Region*. MSc Thesis, Department of Electrical and Electronic Engineering, Institute of Natural and Applied Sciences, Cukurova University, 2023. (Adana, Türkiye)

## Projects

### International Projects

- PyPSA<sup>3</sup> Project, PyPSA meets Africa and PyPSA Earth, **Advisor**, 2022–Present.
- PyPSA Project, PyPSA meets Africa and PyPSA Earth, **Western Asia Coordinator**, 2021–2022.

### TUBITAK<sup>4</sup> Projects

- Developing a Software to Determine the Optimum Capacity Rating for Unlicensed Electricity Generation in Cogeneration and Trigeneration Power Plants Driven by Gas Engines. TUBITAK 3001 Project, Grant Number: 113E769, **Scholar**, 14 Month, Project Budget: ₺36,854.38, 2014–2015.

<sup>3</sup>PyPSA: Python for Power System Analysis

<sup>4</sup>TUBITAK: The Scientific and Technological Research Council of Turkey

**Scientific Research Projects**

- Detection of Non-Technical Losses in Electric Distribution System by Using Data Analytics and Machine Learning Methods. Individual Research Project, Adana Alparslan Turkes Science and Technology University, **Supervisor**, 18 Month, Grant Number: 21103013, Project Budget: ₺20,000.00, 2021–Present.
- Implementation of Short-Term Reactive Power Forecasting Using Artificial Intelligence-Based Techniques for a Nonindustrial Large Building Complex. Individual Research Project, Adana Alparslan Turkes Science and Technology University, **Supervisor**, 13 Month, Grant Number: 19103012, Project Budget: ₺25,000.00, 2019–2021.
- Electric Demand Prediction: Data Acquisition, Implementation of ANN and User Interface Design. Individual Research Project, Cukurova University, **Researcher**, 24 Month, Grant Number: FBA-2017-8252, Project Budget: ₺25,990.07, 2017–2019.
- Very Short-Term Forecasting of a Household Electrical Energy Consumption. Individual Research Project, Cukurova University, **Researcher**, 12 Month, Grant Number: FBA-2017-9344, Project Budget: ₺11,999.99, 2017–2018.
- Developing a Software to Determine the Optimum Capacity Rating of Cogeneration and Trigenation Plants Driven by Gas Engines. Scientific Research Project, Cukurova University, **Researcher**, 12 Month, Grant Number: FYL-2014-2351, Project Budget: ₺5,948.01, 2014–2015.

**Reviews for****Journals in SCIE and SSCI**

- Energy and Buildings
- Energy Strategy Reviews
- Heliyon
- IET Generation, Transmission & Distribution
- IET Renewable Power Generation
- International Journal of Digital Earth
- International Transactions on Electrical Energy Systems
- Journal of Forecasting
- Turkish Journal of Electrical Engineering & Computer Sciences

**Journals in ESCI and Scopus**

- Advances in Science, Technology and Engineering Systems Journal
- Bulletin of Electrical Engineering and Informatics
- IET Smart Grid
- International Journal of Renewable Energy Research
- Majlesi Journal of Electrical Engineering
- Pakistan Journal of Statistics
- Telkomnika

**Journals in Other Indices**

- Cukurova University Journal of the Faculty of Engineering
- Dokuz Eylul University Faculty of Engineering Journal of Science and Engineering
- International Journal of Applied Math. Electronics and Computers
- Renewables: Wind, Water and Solar

	<ul style="list-style-type: none"> <li>• Uludağ University Journal of the Faculty of Engineering</li> </ul>	
<b>Memberships</b>	<ul style="list-style-type: none"> <li>• UCTEA<sup>5</sup> Chamber of Electrical Engineers, Member, Adana,</li> </ul>	2010–2021
<b>Language Skills</b>	<ul style="list-style-type: none"> <li>• Turkish</li> <li>• English (YDS<sup>6</sup>, 85.00/100, Jun 2021)</li> <li>• German and Swedish</li> </ul>	Native Proficient Elementary
<b>Software Skills</b>	<ul style="list-style-type: none"> <li>• C, C++, L<sup>A</sup>T<sub>E</sub>X, MATLAB, Python, R</li> <li>• General IT Skills</li> </ul>	Proficient Excellent
<b>Courses Taught</b>	<b><u>2023-2024 Fall Term</u></b>	
	<ul style="list-style-type: none"> <li>• EEE407 Renewable Energy</li> <li>• EEE423 Embedded Systems</li> <li>• EEE481 Graduation Project</li> <li>• EEE-U7000 Special Area Course</li> <li>• EEE7195 Python for Data Science</li> <li>• EEE7199 Energy Analytics</li> <li>• EEE81XX Digitalisation of Energy Systems</li> </ul>	Bachelor Bachelor Bachelor Masters Masters Masters Doctoral
	<b><u>2022-2023 Spring Term</u></b>	
	<ul style="list-style-type: none"> <li>• EEE110 Computer Programming (Python)</li> <li>• EEE208&amp;ESE208 Circuit Theory II</li> <li>• EEE222&amp;ESE222 Electrical Circuits Lab II</li> <li>• EEE356 Data Analytics (R)</li> <li>• EEE-U7000 Special Area Course</li> <li>• EEE7196 Sustainable Energy</li> <li>• EEE7200 CCHP Systems</li> <li>• EEE8182 Electric Load Forecasting</li> <li>• EEE8183 Energy Informatics</li> </ul>	Bachelor Bachelor Bachelor Bachelor Masters Masters Masters Doctoral Doctoral
	<b><u>2022-2023 Fall Term</u></b>	
	<ul style="list-style-type: none"> <li>• EEE225 Engineering Mathematics I (Differential Equations)</li> <li>• ESE305 Energy Transmission and Distribution</li> <li>• ESE313 Energy Efficiency</li> <li>• EEE407 Renewable Energy</li> <li>• EEE-U7000 Special Area Course</li> <li>• EEE7195 Python for Data Science</li> <li>• EEE7199 Energy Analytics (Python or R)</li> <li>• EEE8183 Energy Informatics</li> </ul>	Bachelor Bachelor Bachelor Bachelor Masters Masters Masters Doctoral
	<b><u>2021-2022 Spring Term</u></b>	
	<ul style="list-style-type: none"> <li>• EEE110 Computer Programming (Python)</li> <li>• EEE453 Electrical Transmission and Distribution</li> <li>• EEE482 Graduation Project</li> <li>• EEE483 Introduction to Energy Analytics (R)</li> <li>• EEE-U7000 Special Area Course</li> </ul>	Bachelor Bachelor Bachelor Bachelor Masters

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<sup>5</sup>UCTEA: Union of Chambers of Turkish Engineers and Architects

<sup>6</sup>YDS: Foreign Language Exam



- EEE7195 Python for Data Science Masters
- EEE7196 Sustainable Energy Masters

**2021-2022 Fall Term**

- EEE225 Engineering Mathematics I (Differential Equations) Bachelor
- EEE407 Renewable Energy Bachelor
- EEE481 Graduation Project I Bachelor
- EEE-U7000 Special Area Course Masters
- EEE7195 Python for Data Science Masters
- EEE7196 Sustainable Energy Masters

**2020-2021 Spring Term**

- EEE110 Computer Programming (Python) Bachelor
- EEE356 Data Analytics (R) Bachelor

**2020-2021 Fall Term**

- EEE105 Introduction to Computer Programming I (C++) Bachelor

**2019-2020 Spring Term**

- EEE110 Computer Programming (C++) Bachelor
- EEE407 Renewable Energy Bachelor
- EEE453 Electrical Transmission and Distribution Bachelor
- EEE482 Graduation Project Bachelor