Azim
Heydari

EDUCATION AND TRAINING

01/11/2017 – 08/02/2021 – Rome, Italy

PhD in Energy and Environment
Sapienza University of Rome

23/09/2011 – 28/06/2014 – Tehran, Iran

Master Degree in Industrial Engineering
Islamic Azad University, South Tehran Branch

23/09/2007 – 22/09/2011 – Iran

Bachelor Degree in Industrial Engineering
Islamic Azad University

WORK EXPERIENCE

07/12/2013 – 29/07/2017

Strategic Planning Consultant
Sanarah Sharif Company

Kerman, Iran

25/08/2015 – 30/05/2017

Lecturer
University of Applied Science and Technology

- Artificial Intelligent
- Maintenance Scheduling
- Operation Research I
- Operation Research II
- Project Control
- Quality Control

Rafsanjan, Iran

01/09/2018 – 01/02/2019

Teaching Assistant
Sapienza University of Rome

- Energy Management

Rome, Italy

INTERNATIONAL COURSES

26/08/2019 – 30/08/2019

Time Series Analysis - with a focus on modelling and forecasting in energy systems

Technical University of Denmark (DTU), Copenhagen, Denmark

10/06/2019 – 14/06/2019

PhD and Industrial short Course on Machine Learning in Power System

Chalmers University of Technology – in cooperation with IEEE Sweden PE/PEL Joint Chapter

20/04/2019 – 30/06/2019

Computer Applications in Power Systems

KTH Royal Institute of Technology, Stockholm, Sweden

RESEARCH PROJECTS

01/04/2019 – 30/09/2019

Joint research project in cooperation with KTH – The Royal Institute of Technology

Title: *Managing Renewable Energies Efficiency based on Environment Emission Reduction Using Machine Learning Methodologies*

01/04/2020 – 30/09/2020

Joint research project in cooperation with University of Alberta

Title: *Analysis of Reliability and Efficiency of Renewable Energy Microgrid*

LANGUAGE SKILLS

MOTHER TONGUE(S): Persian

OTHER LANGUAGE(S):

English

Listening	Reading	Spoken production	Spoken interaction	Writing
C1	C1	C1	C1	C1

PUBLICATIONS

Journal Articles (Published)

- **Heydari, A.,** & Keynia, F. (2016). Prediction of wind power generation through combining particle swarm optimization and Elman neural network (El-PSO). *International Energy Journal*, 15(2).
- **Heydari, A.,** & Keynia, F. (2016). A new intelligent heuristic combined method for short-term electricity price forecasting in deregulated markets. *Australian Journal of Electrical and Electronics Engineering*, 13 (4), 258-267.
- Shahsavari-pour, N., **Heydari, A.,** Kazemi, M., & Karami, M. (2017). A novel method for ranking fuzzy numbers. *International Journal of Mathematics in Operational Research*, 11(4), 544-566.
- Keynia, F., & **Heydari, A.** (2019). A new short-term energy price forecasting method based on the wavelet neural network. *Internat ional Journal of Mathematics in Operational Research*, 14 (1), 1- 14.
- **Heydari, A.,** Garcia, D.A., Keynia, F., Bisegna, F. and De Santoli, L. (2019). A novel composite neural network-based method for wind and solar power forecasting in microgrids. *Applied Energy*, 251, p. 113353.
- **Heydari, A.,** Astiaso Garcia, D., Keynia, F., Bisegna, F., & De Santoli, L. (2019). Hybrid intelligent strategy for multifactor influenced electrical energy consumption forecasting. *Energy Sources, Part B: Economics, Planning, and Policy*, 1-18.
- Nezhad, M. M., **Heydari, A.,** Groppi, D., Cumo, F., & Garcia, D. A. (2020). Wind source potential assessment using Sentinel 1 satellite and a new forecasting model based on machine learning: A case study Sardinia islands. *Renewable Energy*, 155, pp. 212-224.
- Kakueinejad, M. H., **Heydari, A.,** Askari, M., & Keynia, F. (2020). Optimal Planning for the Development of Power System in Respect to Distributed Generations Based on the Binary Dragonfly Algorithm. *Applied Sciences*, 10(14), 4795.
- **Heydari, A.,** Nezhad, M. M., Pirshayan, E., Garcia, D. A., Keynia, F., & De Santoli, L. (2020). Short-term electricity price and load forecasting in isolated power grids based on composite neural network and gravitational search optimization algorithm. *Applied Energy*, 277, 115503.
- Majidi Nezhad, M., Shaik, R. U., **Heydari, A.,** Razmjoo, A., Arslan, N., & Astiaso Garcia, D. (2020). A SWOT Analysis for Offshore Wind Energy Assessment Using Remote-Sensing Potential. *Applied Sciences*, 10(18), 6398.
- **Heydari, A**., Memarzadeh, G., Garcia, D. A., Keynia, F., & De Santoli, L. (2021). Interval prediction algorithm and optimal scenario-making model for wind power producers bidding strategy. *Optimization and Engineering*, 1-23.
- Nezhad, M. M., Neshat, M., Groppi, D., Marzialetti, P., **Heydari, A**., Sylaios, G., & Garcia, D. A. (2021). A primary wind farm site assessment using reanalysis data: A case study for Samothraki Island. *Renewable Energy, 172;* 667-679.
- Nezhad, M. M., Neshat, M., **Heydari, A**., Razmjoo, A., Piras, G., & Garcia, D. A. (2021). A new methodology for offshore wind speed assessment integrating Sentinel-1, ERA-Interim and in-situ measurement. *Renewable Energy*.

Journal Articles (Under Review)

- Majidi Nezhad. M, **Haydari. A,** Groppi. D, Cumo. F, and Astiaso Garcia. D. Renewable energy potential analysis using Sentinel-1: a new forecasting model based on machine learning for converters installation and a case study of Italian islands. *Renewable Energy*, Under Review.
- **Heydari. A,** Majidi Nezhad. M, Neshat. M, Astiaso Garcia. D, Keynia. F, De Santoli. L, and Bertling Tjernberg. A combined fuzzy GMDH neural network and grey wolf optimization application for wind turbine power production forecasting considering SCADA data. *Renewable Energy*, Under Review.
- **Heydari, A.,** Majidi Nezhad, M., Astiaso Garcia, D., Keynia, F., and De Santoli, L. Air pollution forecasting application based on deep

learning model and optimization algorithm. *Clean Technologies and Environmental Policy*, Under Review.
- Neshat, M., Majidi Nezhad, M., Abbasnejad, E., Mirjalili, SA., Groppi, D., **Heydari, A.,** Bertling Tjernberg, L., Astiaso Garcia, D., Alexander, B., Shi, Q., and Wagner, M. Wind turbine power output prediction using a new hybrid neuro-evolutionary method. *Energy*, Under Review.
- Majidi Nezhad, M., **Heydari, A.,** Pirshayan, P., Groppi, D., Astiaso Garcia, D. A novel forecasting model for wind source assessment using Sentinel 1 images and machine learning method: a case study Favignana island. *Renewable Energy*, Under Review.

Conference Articles

- **Heydari, A.,** Astiaso Garcia, D., Keynia, F., and De Santoli, L. Mid-Term Load Power Forecasting Considering Environment Emission using A Hybrid Intelligent Approach. The 5th International Symposium on Environment-Friendly Energies and Applications (EFEA 2018). September 24-26 in Rome, Italy.
- **Heydari, A.,** Astiaso Garcia, D., Keynia, F., Bisegna, F., and De Santoli, L. Forecasting Long-Term Carbon Dioxide Emission from energy consumption through Intelligent Computing Methods. Applied Energy Symposium and Forum, Renewable Energy Integration with Mini/Microgrids, REM 2018, 29–30 September 2018, Rhodes, Greece.
- **Heydari. A,** Lakzadeh. A, Hassani. M, Majidi Nezhad. M, Astiaso Garcia. D, and Keynia. F. Design and implementation of a new wind speed and power forecasting model based on hybrid neural network and WPD pre-processing. The 16th Conference on Sustainable Development of Energy, Water and Environment Systems (SDEWES), Under review.
- Mirhosseini. M, **Heydari. A,** Astiaso Garcia. D, and Keynia. F. A new reliability-centered maintenance programming for sustainable distribution networks based on new indexed components ranking. The 16th Conference on Sustainable Development of Energy, Water and Environment Systems (SDEWES), Under review.

Book Chapters

- **Heydari, A**., & Keynia, F. DIFFERENT TECHNIQUES FOR PREDICTION OF WIND POWER GENERATION. *RENEWABLE ENERGY SYSTEMS,* 85.
- Keynia, F., and **Heydari, A**. "WIND SPEED AND POWER GENERATION FORECASTING BY A HYBRID NEURAL NETWORK PREDICTION MODEL." ADVANCES IN ENERGY RESEARCH: 27, 2017.

Books

- Shahsavari Pour, N., Kazemi, M., Asadi, H, and **Heydari, A.** "Application of Met-heuristic Algorithm in Production Planning." Kian Publication, Iran (Persian), 2015.
- Keynia, F., and **Heydari, A**. "An Introduction to New Prediction Models in the Operation of Power Systems." Kerman Branch, Islamic Azad University, Kerman, Iran (Persian), 2016.

NETWORKS AND MEMBERSHIPS

Memberships

- Member of Society of Petroleum Engineers (SPE)
- Member of Iranian Wind Energy Association
- IEEE Student Member

Academic Reviewer

- IEEE Transactions on Power Systems
- Energy (Elsevier)
- Energy Conversion Management (Elsevier)
- International Journal of Electrical Power and Energy Systems (Elsevier)
- International Journal of Energy Research (Wiley)
- Clean Technologies and Environmental Policy (Springer)
- Energy Sources, Part A: Recovery, Utilization, and Environmental Effects (Taylor & Francis)
- Economic Modelling (Elsevier)
- Industrial Management & Data System (Emerald Group Publishing)
- Computational Economics (Springer)
- Earthquake Engineering and Engineering Vibration (Springer)
- Energies (MDPI)
- Applied Science (MDPI)
- Sustainability (MDPI)
- Processes (MDPI)
- Agronomy (MDPI)
- Journal of Vibration and Control

RESEARCH INTERESTS

Research Interests

- Optimization of Hybrid Renewable Energy Systems
- Energy Management
- Machine Learning
- Point and Interval Prediction
- Electricity Market
- Predictive Maintenance
- Energy Planning

COMPUTING SKILLS

Computing Skills

Software

MATLAB, HOMER, GAMS, PVsyst, WRPLOT, SPSS, Minitab, Office, SNAP, ENVI