

Emad Maher Natsheh

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Date of Birth: 8 May, 1985.

Nationality: Jordanian

Education

2010- 2013: PhD in Computer Engineering, Manchester Metropolitan University, UK.

Thesis Title: Hybrid Power Systems Energy Management Based on Artificial Intelligence

Supervisors: Dr. Alhussein Albarbar, Prof. Ken S Hurst

Brief Synopsis of Research:

The thesis presents a novel adaptive scheme for energy management in stand-alone hybrid power systems. The proposed management system is designed to manage the power flow between the hybrid power system and energy storage elements in order to satisfy the load requirements based on artificial neural network (ANN) and fuzzy logic controllers. The neural network controller is employed to achieve the maximum power point (MPP) for different types of photovoltaic (PV) panels. The advance fuzzy logic controller is developed to distribute the power among the hybrid system and to manage the charge and discharge current flow for performance optimization. The developed management system performance was assessed using a hybrid system comprised PV panels, wind turbine (WT), battery storage, and proton exchange membrane fuel cell (PEMFC).

Research Interests:

Alternative energy sources, fuel cells, power system modelling, energy management and control algorithms based on artificial intelligence.

2009 – 2010: MSc in Computer and Network Technology (Distinction), Manchester Metropolitan University, UK.

Modules included: Communication Systems, Agile Computer systems, Computer Systems, Electronic Photonics Systems, Integrated Management Systems and Programming.

2003 – 2008: BSc in Computer Engineering, An-Najah National University, Palestine.

Modules included: artificial Intelligence, Structured Programming, Software Engineering (Including Object Oriented Theory), Networks Communication Systems, electronics, microprocessor, microcontroller, and signal processing. Etc

Employment

(June 2021– Present day) Associate Professor, Dept. of Computer Engineering, An-Najah National University, Nablus, Palestine.

(Aug 2013 – May 2021) Assistant Professor, Dept. of Computer Engineering, An-Najah National University, Nablus, Palestine.

(June 2008 – Aug 2009): IT Specialist /Web Programmer to improve the quality of e-learning using the SCORM standard, An-Najah University, Nablus, Palestine.

(Sep 2010 – July 2013) Teaching Assistance, Dept. of Engineering and Technology, Manchester Metropolitan University, Manchester, UK (led seminars and tutorial classes, supervised undergraduates in the laboratory).

Recent External Roles

- ❖ **External examiner for BEng and MSc courses in:** Computer Engineering, and Renewable Energy
- ❖ **Regular reviewer for journals of:** Energy Conversion and Management, Sustainable Energy Technologies & Assessments, and IET Renewable Power Generation
- ❖ **Advisor for An-Najah's IEEE Student Branch**
- ❖ **Program committee in the PICECE 2018** (7th Palestinian International Conference on Electrical and Computer Engineering)

Skills

- ❖ **Computing Skills:**
 - Fairly extensive experience of OOP programming languages including JAVA, C, C++, C#, and Visual Basic.
 - Data Analysis: Python, Data Modelling, Data Visualization, Data Mining
 - Experienced with web page development and design tools: PHP, HTML, AJAX, JAVA Script, SQL, and Flash.
 - Operating Systems: MacOS, Microsoft Windows, Linux.
 - Applications: Microsoft Office Suite, Internet Explorer, Paint Shop Pro, MPLAB X IDE, Multisim, FPGA, ITGuru, PSPICE, SIMULINK, Dreamweaver and several e-mail packages.
- ❖ **Teaching Skills:**
 - Taught different type of subjects to different level of students (from year 1 to MSc level).
 - Supervise lab sessions for undergraduate and postgraduate students.

Subjects I Have Taught

- **Computer Programming**
- **Artificial Intelligence**
- **Digital Circuit Design 1**
- **Digital Circuit Design 1 Laboratory**
- **Microprocessor Laboratory**
- **Introduction to Data Science**
- **Microcontrollers Laboratory**
- **Web Programming**
- **Advanced Web Programming**
- **Object-Oriented Programming**
- **Engineering Design and Practice**
- **Data Analysis with Python**

❖ **Other skills**

- Statistical software: extensive experience with MatLab.
- Knowledge of research methodologies
- Data and information collection
- Cleaning and preparing data for analysis
- Exploratory data analysis using libraries such as Pandas, Numpy, Matplotlib and Seaborn
- Writing and presenting reports

Workshops Attended

- **(Nov 2013)** Palestine Renewable Energy Leadership Training Program, Arizona State University.
- **(July 2018)** Training workshop on, Verilog-based Design and Verification.
- **(Sep 2018)** Workshop on Integrating Entrepreneurship in Universities
- **(Sep 2018)** 6th Annual Symposium on Education and New Learning Methodologies
Efficient Eco-systems for Industry-Based Learning Models
- **(July 2019 – Aug 2019)** Training workshop on, Developing and Adapting Entrepreneurship Curricula in Palestine.
- **(Feb 2020)** Participation in a two-day training course for trainers in the field of Green Entrepreneurship. The course aims to enhance the partnership between leadership and the green economy, to work to advance the Palestinian economic reality, and to establish a presence on the world trade map.
- **(May 2020)** Participated in the online workshop: "AI, Financial Automation and Market Risk", which was held by the FIN-Tech Project with the European Commission and the University College London (UCL).
- **(July 2021 – Sep 2021)** Participated in a workshop on human-centered design
- **(May 2023 – Dec 2023)** Attending a training program on Capacity Building in Gender-Responsive Innovation and Research Commercialization.
- **(Jun 2024)** Completed the ITCILO EPISODE Training of Trainers – UNIMED, Turin, specializing in Digital Social Entrepreneurship and equipping educators with innovative tools for face-to-face and online teaching.

Projects

- **(2021 -2022)** E-Governance Project, in Palestine, Middle East and North Africa, to develop and provide
- **(Jan 2021 – Jan 2022)** Governance framework and metadata Standards of Geographic Information for the Palestinian Spatial Data Infrastructure (SDI)

Training Delivered

- **(March 2021)** Give a public lecture in "Ideation: Selecting the research problem and identifying its importance "
- **(March 2022)** Give a training course for Paltel staff in "Data Science and Machine Learning"
- **(July 2023 – Aug 2023)** Give a training course in "Data Analysis with Python"
- **(Feb 2025)** Designed and delivered training on AI applications and digital tools for enhanced learning and productivity

Referees

[1] Dr Al-Hussein Albarbar
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Tel: +44 (0)161 2476297

Conferences, Presentations and Courses Attended

- IET Conferences (RPG (2 PAPERS)), 2011.
- IEEE Conference, ISGT, 2011.
- 25th International COMADEM 2012
- 22nd International Conference on REM, 2024

Publications/Conference Papers

- Please see the following link for recent publications:
<https://staff.najah.edu/en/profiles/3121/>

Professional Memberships

AMIET	Institute of Engineering and Technology, 2010.
IEEE	The Institute of Electrical and Electronics Engineers, 2018.
JEA	Jordan Engineers Association, 2023.