

# Wael Farag

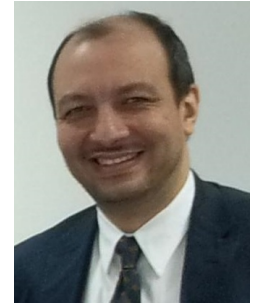
Associate Professor @ Cairo University

Head of Group Electronics Expertise and Development Services @ Valeo

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## Summary

- Unique mixture of research, industry, teaching, coaching and business management experiences.
- Research track records in intelligent systems, electronic controls, embedded systems and renewable energy.
- Spanning several industries: Automotive, Oil & Gas and Renewable Energy.
- Teaching, training and coaching experiences in various engineering topics with real industrial touch-base: control and automation systems, power electronics industrial applications, embedded systems development, and general electrical engineering.
- Broad work experience in several counties: Canada, USA & Egypt.
- Hands-on experience in R&D environments with national coordination capabilities of major international projects (ITEA2, STDF ... etc).
- Accountable of coordinated management for multiple projects of an annual budget that exceeds 20M US\$ directed towards strategic businesses and other organizational objectives.
- Assuming responsibilities of presenting the organization at high-profile conferences, business meetings, site visits in presence of country presidents, prime-ministers, ministers as well as business leaders.

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## Experience

Associate Professor @ Cairo University

Electrical Engineering Department



Cairo University

June 2003 - Present (11 years – 7 months) – Cairo, Egypt

- Teaching (Undergrad & Graduate Courses): Modern Control Systems Applications, Power Electronics Industrial Applications, Embedded Systems, Real-Time Programming, Electronic Circuits for Power Systems. Duties include preparing and presenting course materials, providing guidance for the students, and preparing & marking exams.
- Research:
  - Automotive: Autonomous Driving, Active Safety and Connected Cars.
  - Renewable Energy: Efficient Wind Turbine Control Systems.
  - Internet of Things: Climate Control and Smart City Applications.

Head of Group Electronics Expertise and Development Services @ Valeo (French Tier 1 Automotive Supplier)



January 2013 - December 2014 (2 years) – Cairo, Egypt

- Leads Software and Standardization services to various automotive product-lines and business groups.

- Manages the Expertise Program and supports Technology Development Plans.
- Focal point for Research activities and University Relations.
- Clients: BMW, Mercedes-Benz, Jaguar (JLR), VW, Peugeot, Nissan, Toyota, Honda, Ford ... etc.

**Head of Interior Controls and Electronics Dept. @ Valeo** (French Tier 1 Automotive Supplier)



January 2011 - December 2012 (2 years) – Cairo, Egypt

Leading the division with over 170 Engineers organized into multiple engineering teams (Security Systems, Body Controllers, Climate Control & Top Column Systems) to design and develop different electronic automotive systems for many well-known brands (BMW, Mercedes-Benz, Peugeot, Nissan, Toyota, Honda, Ford ... etc).

**Senior Technical Manager @ Valeo**  
(French Tier 1 Automotive Supplier)



June 2008 - December 2010 (2 years 7 months), Cairo, Egypt

- Leading organizational-objectives like: knowledge dissemination improvement, requirement management improvement, resources management & allocation Improvement.
- Daily management of the Team Managers, directs building new teams, business development and resource allocation.
- Daily management of Project Managers, directs the evaluation of new RFPs, quotations, and opportunity/risk management.

**Project-Leaders Manager @ Valeo**  
(French Tier 1 Automotive Supplier)



June 2006 - June 2008 (2 years 1 month)

- Daily management of the Project Leaders, monitors their interface with Valeo customers.
- Reports to the senior management the status of all current running projects.
- Follows all Valeo Quality Standards, processes and Project Development Methodologies.
- Assures the Quality, Cost, Schedule objectives of projects deliverables.
- Setting project quotations, budget together with the Valeo Business Development Manager.
- Executing Valeo standardization and productivity efforts.

**TRICONEX Projects Manager @ Schneider Electric**  
(European Multinational Corporation)



July 2003 - June 2006 (3 years) – Cairo – Egypt, Rome – Italy.

- Leading an engineering team to develop TRICONEX Safety Instrumented Systems (SIS) in conjunction with the FOXBORO Decision Control System (DCS) for many Oil-&-GAS and Petrochemical Plants and Power Stations around the world including USA, Italy, France, Germany, Qatar, United-Arab-Emirates, Saudi-Arabia ... etc.
- The work includes: projects cost and man-hour estimation, proposals preparation, work-flow and

progress monitoring, QC/QA implementation, recruiting and evaluating employees, setting annual objectives for the group, working closely with customers and vendors ... etc

### **Chief System Engineer @ CNH Industrial**

(United States)

May 2000 - June 2003 (3 years 2 months) – Chicago - Illinois

- Working with teams and leading technically the design & integration of different electronic control modules for various construction and agricultural machines (off-road vehicles).
- Projects: Electronic Ride Control, Electronic Active Cab Suspension, Backhoe Stabilization System, Horizontal Drilling Machine Load Control, Dashboard unit for O&K Wheeled & Crawler Excavators.



### **Senior System Engineer @ CNH Industrial**

(United States)

May 1998 - May 2000 (2 years 1 month) – Chicago - Illinois

- Design and Development of embedded control systems for various construction and agricultural machines.
- Projects: Advanced Instrument Cluster, Drive Train Controller, Electronic Joystick, and Electronic Service Tool for Crawler Dozers, ... etc



### **Research and Teaching Assistant @ University of Waterloo Electrical and Computer Engineering Dept. – (Canada)**

May 1995 - April 1998 (3 years) – Ontario, Canada

Research: Artificial Intelligence, Intelligent Controls, Control Systems.

Teaching: Computer control applications, Control systems theory, Power systems analysis ... etc. Duties include teaching in tutorials, lab supervision, and marking assignments, lab reports, and exams.



### **Lecturer @ Wilfrid Laurier University, Physics and Computing Department - (Canada)**

September 1995 - December 1995 (4 months), Ontario, Canada

Lecturing "Electronic Instrumentation" course including setting assignments and exams.



### **Research & Teaching Assistant @ University of Saskatchewan, Electrical Engineering Dept. - (Canada)**

August 1994 - April 1995 (8 months) - Saskatchewan, Canada

Research: Digital Protection of Power Systems.

Teaching: Digital Control systems. Duties include teaching in tutorials, lab supervision, and marking assignments, lab reports, and exams.



**Electronics Engineer @ Engineering Office of Integrated Projects (EOIP).**



September 1991 - August 1994 (3 years) – Cairo, Egypt

- Part-Time (20 hrs/week).
- Activities: Design of microprocessor-based systems, delta-sigma A/Ds, switched-mode power supplies, data acquisition systems, signal conditioning and filtering circuits, interfacing to the IBM-PC family, and C, Pascal and Assembly real-time programming.
- Projects: Design and implementation of different types and sizes of battery chargers, Switched-Mode Power Supplies, Digital Power Relays and Meters and micro-controller-based elevator state-machines.

**Research and Teaching Assistant @ Cairo University, Electrical Engineering Dept.**



September 1990 - August 1994 (4 years)

- Research: Power Electronics and Electronic Controls.
- Teaching: Power Electronics, Measurements, Circuit Analysis, Electric Machines, Electromagnetics, Computer programming. Duties include teaching in tutorials, lab supervision, and marking assignments, lab reports, and exams.

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**Education**

**Moraine Valley Community College – Chicago, Illinois**

Master of Business Administration (MBA) prerequisite courses, 2000 - 2002

Grade: A

Courses: Principals of Management, Principals of Macroeconomics, Business Essentials, Principals of Marketing, Financial Accounting and Business Law.



**University of Waterloo – Ontario, Canada**

Doctor of Philosophy (Ph.D.), Electrical and Computer Engineering, 1995 – 1998

Dissertation: Synthesis of Intelligent Hybrid Systems for Modeling and Control.



**University of Saskatchewan, Electrical Engineering Dept. - Ontario, Canada**

Master of Science (M.Sc.) Courses, Electrical Engineering, 1994 – 1995

Graduate Level Courses: digital signal processing, electronic instrumentation, numerical methods, digital techniques for power systems measurements and protection, power systems protection and neural networks: theory and applications.



**Cairo University**

Master of Science (M.Sc.), Electrical Engineering, 1990 – 1993

Thesis: Microcontroller-based overall protector for three phase induction motors.



## Cairo University

Bachelor of Applied Science (B.Sc.), Electrical, Electronics Engineering, 1985 - 1990

Grade: Distinction with Honors Degree, ranked (2/150)



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## Courses

### Independent Coursework

Technology Entrepreneurship I	Stanford University
Global History Lab, Part 1	Princeton University
Technology Entrepreneurship II	Stanford University
PMP Exam Preparation Training	EduCBA Academy

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## Certifications

### Certified ScrumMaster

Scrum Alliance License 359574      Canada, September 2014



### Achieving Managerial Excellence

CEDEP – Executive Education Club, Fontainebleau, France, June 2012



### ISO9001:2000 Lead Auditor Certification

DNV Certification BV - License 9077/3, Coevorden, The Netherlands



### FRSA: Functional Safety and Reliability Assessment

TÜV SÜD License FRSA-03-40      November 2003, Düsseldorf, Germany



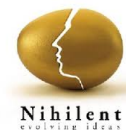
### Grand Systems Engineering Analysis, Management, and Evaluation

JOG System Engineering, Inc - July 1999, Chicago, USA



### Capability Maturity Model Integration CMMI

Nihilent Technologies - August 2006, Cairo - Egypt



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## Patents

### EDC Draft Force Based Ride Controller

United States Patent 6-196-327 Issued March 6, 2001

**Inventors:** Wael Farag et al.

A system for reducing tractor pitching is disclosed, including a tractor with a hitch couplable to an implement, a force transducer that provides a force signal indicative of a force applied to the hitch by an implement, a position transducer to provide a position signal indicative of a position of the hitch, a hydraulic actuator to raise and lower the hitch, a control valve that responds to the force and position transducers to generate a valve signal, where the control circuit receives the force and position signals and drives a pitch-reducing control valve signal there from.

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## Honors and Awards

### **Best Paper Award**

Massachusetts Institute of Technology (MIT)

November 1996

NAPS'96 Conference

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## Grants and Funds

### **Information Technology Industry Development Agency (ITIDA)**

ITEA2 Web of Objects “Internet of Things” - PDP2012.R10.ITEA:WoO

Grant amount: 550,000 US\$ (2012 – 2014)

Project: “An Autonomous Energy Efficient Climate Control Solution for SMART Buildings”.



### **Science and Technology Development Fund (STDF)**

Special Call for Renewable Energy - TC/1/Energy/2009/Renewable/1411

Grant amount: 420,000 US\$ (2009 – 2012)

Project: “*LidarCon*: An Efficient Wind Turbine Control System based on LiDAR Technology”



## Speeches

### **“VIAS: the Valeo’s embedded arm in Egypt”**

Speech (Keynote Speaker): in Egypt’s Information Technology Day, Smart Village Convention Center. March, 2009

Attendance: Country President, Prime Minister, Ministers and business leaders.

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## “Valeo: more than 80 years in automotive industry”

Speech (Keynote Speaker) / Presentation: "ITU Telecom Africa Conference", May 2008.

Attendance: Egyptian President, African Presidents, Prime Ministers, High Profile Delegates and business leaders.



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## Reference Projects

### ITEA2 Web of Objects "ClimaCon"

January 2012 to December 2014

<http://www.web-of-objects.com/>

Consortium: 25 Academic, Research and Industrial Organizations from France, Spain, South Korea, Egypt and Canada.

Project Leader (Egypt): Wael Farag

The project aims to develop a network and services infrastructure for smart objects simplifying the development and the deployment of the distributed applications independent of proprietary protocols. Based on DPWS and a fine grained semantic modeling of devices and services, security and privacy mechanisms are assured at the device level, and a reasoning-based objects adaptation to context is developed. It includes object reactivity in case of vital resources decrease, but also autonomic collaboration with other smart objects for accomplishing complex tasks.

"ClimaCon" solution is the Cairo University demonstration that augments centralized or individual HVAC systems to provide in-building climate control solution adopting 6LoWPAN. It is designed for the highest energy efficiency as well as the utmost comfort in terms of (temperature, humidity, air quality ... etc.). Moreover, it has been intended to be easy to deploy, maintain and integrate with legacy systems.

### **LidarCon: An Efficient Wind Turbine Control System based on LiDAR Technology**

July 2009 to July 2012

Consortium: Cairo University, Natural Power, Inc. (UK).

Project Leader: Wael Farag

To develop and demonstrate a comprehensive and highly sophisticated wind turbine controller, that provides both pitch and yaw actions and utilizing LiDAR sensing and measurement capabilities. Moreover, building a powerful digital-



Cairo University

signal-processing control board that will handle a stream of three-dimensional data input and produce complex and accurate real-time wind models. These models will facilitate the testing of different feed-forward control with disturbance compensation designs. Additionally, these models will be also used in the investigation of the applicability of the Non-linear Model Predictive Controller (NMPC) approaches.



### **An Integrated Curriculum in Automation and Instrumentation for Electrical Energy Systems.**

March 2004 to July 2005

Consortium: Cairo University, HEEPF.

Member: Wael Farag

This project is funded by (Higher Education Enhancement Project Fund) HEEPF through the World Bank to improve and develop curriculum courses and lab experiments to suit providing lectures, labs by remote learning through the Internet. This project serves students both graduate & undergraduate in the fields of electrical power, automation, instrumentation, mechatronics and computer control.



Cairo University

### **LAO - Linde KCA**

June 2005 to June 2006 – USA, Netherlands, Germany/Saudi Arabia

Consortium: Schneider Electric, Linde GmbH.

Project Manager: Wael Farag

Design and Development of Emergency Shut Down & Fire-&-Gas systems for Linear Alpha Olefins Plant in Al-Jubail, Saudi Arabia. The 6-month long FAT & I-FAT took place in Houston, USA and Coevorden, Holland respectively, and the 6-month commissioning in Al-Jubail, Saudi Arabia.



### **Ain-Dar Gas Turbines Critical Control Systems**

December 2004 to May 2005 – USA, Netherlands, Germany/Saudi Arabia

Contractor: Schneider Electric.

Project Manager: Wael Farag

Developing the control system for two Gas Turbines in Ain-Dar, Saudi Arabia using TRICONEX safety and critical control system.



### **ORYX Gas To Liquid GTL plant (SASOL)**

October 2003 to March 2005

Consortium: Schneider Electric, Technip.  
Project Manager: Wael Farag

Integrated Control System: Developing the FOXBORO Decision Control System (DCS) & the TRICONEX Safety Instrumented System (SIS) for the GTL plant in Ras Laffan, Qatar. (The 6-month long FAT took place in Rome, Italy).

### **Dalia FPSO in Angola**

February 2004 to October 2004 – France, Angola.

Contractor: Schneider Electric, Total S. A.  
Project Manager: Wael Farag

Developing Emergency Shut-Down (ESD) & Fire and Gas (FGS) Systems for a Floating Production Storage and Offloading (FPSO) vessel owned by TOTAL. (The 4-month long FAT took place in Paris, France).

### **Requirement Management Improvement project**

January 2007 to July 2007 – Cairo, Egypt.

Company: Valeo  
Project Manager: Wael Farag

Organizational-Objective based Project: to develop requirement analysis guidelines & checklists that help to standardize developers outcome. Also, to build standard models for requirement traceability automation. Moreover, optimizing and fine-tuning the associated processes.

### **AiroDiag: A Sophisticated Tool that Diagnoses and Updates Vehicles Software Over Air**

August 2007 to Feb 2008 – Cairo, Egypt.

Company: Valeo  
Project Manager: Wael Farag

This project introduces a novel method for diagnosing embedded systems and updating embedded software installed on the electronics control units of vehicles through the Internet using client and server units. It also presents the communication protocols between the vehicle and the manufacturer for instant fault diagnosis and software update while ensuring security for both parties.



AiroDiag ensures maximum vehicle efficiency for the driver and provides the manufacturer with up-to-date vehicle performance data, allowing enhanced future software deployment and minimum loss in case of vehicle recalls.

**Resources Management & Allocation Improvement project:**

August 2007 to Feb 2008 – Cairo, Egypt.

Company: Valeo  
Project Manager: Wael Farag



Organizational-Objective based Project: To develop new procedures that allow better resource allocation and utilization taking into consideration skills level and HR objectives & issues. Longer term visibility about resource utilization is also a key objective.

**Knowledge Dissemination Improvement project**

January 2009 to Nov 2009 – Cairo, Egypt.

Company: Valeo  
Project Manager: Wael Farag



Organizational-Objective based Project: To build channels and activities that optimize the knowledge transfer throughout the organization either through push or pull modes. Improve and fine-tune the associated processes & procedures.

**Electronic Ride Control of Off-Road Vehicles.**

June 1998 to March 1999 – Chicago, Illinois, USA.

Company: Case New Holland (CNH) Industrial  
Senior Engineer: Wael Farag



Enhancing the ride comfort of a tractor coupled to a suspended implement, through controlling the height of the implement with respect to the tractor center of gravity. The designed controller used a Proportional-Differential control technique to reduce the tractor bounce while driven on gravel roads contain pumps and dumps. The work includes: developing the specifications, designing and programming the control algorithm and testing/tuning the prototype controller. Releasing the system as a final product.

**Electronic Active Cab Suspension**

Feb 1999 to Jan 2000 – Chicago, Illinois, USA.

Company: Case New Holland (CNH) Industrial  
Senior Engineer: Wael Farag



Moving the Cab of the tractor using three linear-motor actuators to ensure the comfort of the driver and maintain the front wheels grip on the road. This controller uses an LQR algorithm. The work includes: developing the requirements/specifications, designing the control algorithm, testing/tuning the prototype controller, and working with different vendors to integrate the final product.

**Horizontal Drilling Machine Load Control.**  
Feb 2000 to Oct 2000 – Chicago, Illinois, USA.

Company: Case New Holland (CNH) Industrial  
Chief Engineer: Wael Farag



This controller is managing the engine loads by regulating the flow to the hydrostatic motors that generate the thrust and rotation. As soon as engine speed drops below a certain threshold level, the controller kicks in manipulating the thrust and the rotation until the engine is optimally loaded.

**Dashboard unit for O&K Wheeled & Crawler Excavators**  
Oct 2000 to Oct 2001 – Chicago, Illinois, USA.

Company: Case New Holland (CNH) Industrial  
Chief Engineer: Wael Farag



This is a dashboard and an Infenion-515C-based control unit for various functions in the excavator. The work includes: developing the requirements document, design simulator and testing units and developing the application software using C under Kiel environment.



**Advanced Instrument Cluster, Drive Train Controller, Electronic Joystick, and Electronic Service Tool for Crawler Dozers**  
Nov 2001 to Sept 2001 – Chicago, Illinois, USA.

Company: Case New Holland (CNH) Industrial  
Chief Engineer: Wael Farag



The work includes: developing the requirement and testing-plan documents for the various modules in the system, working with vendors and suppliers during development, testing the integration and function of various modules of the system (field as well as bench testing), and design simulators to test the whole

system on bench.

## **Backhoe Stabilization System**

Oct 2001 to Oct 2002 – Chicago, Illinois, USA.

Company: Case New Holland (CNH) Industrial

Chief Engineer: Wael Farag



This system suppresses the machine vibrations during digging by moving the chassis using the front loader (bucket) hydraulic cylinders.

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## Interests

- Reading: Economics, History and Technology.
  - Sports: Long distance running (20 km), Long distance Swimming, Chess.
  - Volunteering in Public Social Work.
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## Publications

- [1] Wael Farag, Omar Afify, “*ClimaCon: An Autonomous Energy Efficient Climate Control Solution for Smart Buildings*”, Accepted to be published in “Control Engineering Practice”, A Journal of IFAC, Elsevier, Oct 2015, ISSN: 0967-0661.
- [2] Wael Farag, Omar Afify, “An Energy-Efficient Climate Control Solution for Smart Buildings with Comfort Enhancement”, in the “International Journal of Software Engineering (IJSE)”, Jan 2015, ISSN: 1687-6954.
- [3] Wael Farag, Omar Afify, Shady Ahmed, Omar Gamal, “An Energy-Efficient Climate Control Solution for Smart Buildings Based on Predicted-Mean-Vote Criteria”, Proceedings of AMECSE, 1st Africa & Middle East Conference on Software Engineering, Oct 21-22, 2014, Cairo, Egypt.
- [4] H. M. Hassan, W. A. Farag, M. S. Saad and A. L. Elshafei, “Adaptive Predictive Wind Turbine Pitch Control using LiDAR Technology”, Accepted to be published in Renewable Energy - An International Journal (ISSN: 0960-1481), Elsevier.
- [5] Ahmed M. Hemeida, Osama A. Mahgoub, Wael A. Farag, “Design of a Comprehensive 5MW Direct-Driven PMSG wind Turbine Emulator Using FAST nonlinear Wind Turbine Model”, IJACE062, ISSN: 2325-7407, Volume 2, Issue 4, International Journal of Automation and Control Engineering, November 2013.
- [6] Mina Nagiub, Wael Farag, “Automatic selection of compiler options using genetic techniques for embedded software design”, in the proceedings of the 2013 IEEE 14th International Symposium on Computational Intelligence and Informatics (CINTI), Budapest, Hungary, November 19, 2013, ISBN: 978-1-4799-0194-4.

- [7] Karim Mansour, Wael Farag, “AiroDiag: A Sophisticated Tool that Diagnoses and Updates Vehicles Software Over Air”, in the proceeding of the 2012 IEEE International Electric Vehicle Conference (IEVC), TD Convention Center Greenville, SC, USA, March 4, 2012, ISBN: 978-1-4673-1562-3.
- [8] H. M. Hassan, W. A. Farag, Abdel Latif ElShafei, and M. S. Saad, “Designing Pitch Controller for Large Wind Turbines via LMI Techniques”, in the Proceedings of the 2011 IEEE International Conference on Smart Grid and Clean Energy Technologies (ICSGCE2011), pp 503-509, 27-30 September 2011, Chengdu, China. This paper has been selected as well for its quality to be published in Energy Procedia, Elsevier, pp 808-818, vol. 12, 2011.
- [9] H. M. Hassan, W. A. Farag, M. S. Saad and A. L. Elshafei, “Adaptive Look-Ahead Feed-forward Wind Turbine Pitch Control using LIDAR Technology”, Proceedings of the International Conference on Sustainable Systems and Technologies (ICSST 2012), World Academy of Science, Engineering and Technology (WASET) 65 2012, Amsterdam, The Netherlands, May 13-14, 2012, pp 675-681.
- [10] H. M. Hassan, W. A. Farag, M. S. Saad and Abdel Latif Elshafei, “Robust Dynamic Output Feedback Pitch Control for Flexible Wind Turbines”, Proceedings of IEEE EnergyTech 2012 Conference, pp 1-6, May 29-31, 2012, Cleveland, Ohio, USA, ISBN 978-1-4673-1836-5.
- [11] H. M. Hassan, W. A. Farag, Abdel Latif ElShafei, and M. S. Saad, “A Robust LMI-Based Pitch Controller for Large Wind Turbines”, Renewable Energy, v.44, 2012 August, p.63(9) (ISSN: 0960-1481), Elsevier, The Official Journal of WREN - The World Renewable Energy Network.
- [12] Ahmed M. Hemeida, Wael A. Farag, Osama A. Mahgoub, “Modeling and Control of Direct Driven PMSG for Ultra Large Wind Turbines”, in the Proceedings of International Conference of Nuclear and Renewable Energy Engineering (ICNREE 2011, 28-30 Nov., Venice, ITALY), pp 918-924, World Academy of Science, Engineering and Technology (WASET) 59 2011.
- [13] H. M. Hassan, W. A. Farag, Abdel Latif ElShafei, and M. S. Saad, “Design of Multi-Objective Robust Pitch Control for Large Wind Turbines”, in the Proceedings of the World Congress on Sustainable Technologies (WCST-2011), pp 95-100, November 7-10, 2011, London, UK.
- [14] M. Taha, Wael A. Farag and Osama Mahgoub, “A Cost-Effective SVM-Based Micro-Stepping Control Circuit for Stepping Motors”, 1st IFAC International workshop on Advanced Control Circuits and Systems (IFAC ACCS’05), Cairo, Egypt, March 06-10, 2005.
- [15] Wael A. Farag, “Extraction of Fuzzy-Control Rules from the Input-Output Properties of a Controlled Plant”, 1st IFAC International workshop on Advanced Control Circuits and Systems (IFAC ACCS’05), Cairo, Egypt, March 06-10, 2005.
- [16] Wael A. Farag, “An Intelligent Speed Stabilizer for Synchronous Machines”, 1st IFAC International workshop on Advanced Control Circuits and Systems (IFAC ACCS’05), Cairo, Egypt, March 06-10, 2005.

- [17] Wael Farag and Ahmed Tawfik, "On Fuzzy Model Identification and the Gas Furnace Data", Proceedings of the IASTED International Conference, Intelligent Systems and Control 2000, pp. 210-214, August 14-16, 2000, Honolulu, Hawaii, USA.
- [18] Wael A. Farag and Mohmoud Kamel, "Microprocessor-based protection system for three-phase induction motors", Electric Machines and Power Systems Journal, Vol 27, pp. 453-464, 1999, Taylor and Francis, UK.
- [19] Wael A. Farag, V.H. Quintana, and G. Lambert-Torres, "An Optimized Fuzzy Controller for a Synchronous Generator in a Multi-Machine Environment", Fuzzy Sets and Systems (Special Issue on Power Systems Applications), Volume 102(1), Feb. 1999, pp. 71-84, Elsevier Science, The Netherlands.
- [20] Wael A. Farag, V.H. Quintana, and G. Lambert-Torres, "A Genetic-Based Neuro-Fuzzy Approach for Modeling and Control of Dynamical Systems", IEEE Transactions on Neural Networks (Special Issue on Hybrid Systems), 9(5), pp. 756-767, September 1998.
- [21] Wael A. Farag, V.H. Quintana, and G. Lambert-Torres, "Applications of Artificial Intelligence Techniques in Synchronous Machines Control: A Review", in the international journal of Engineering Intelligent Systems (EIS), Vol 6, No 2, pp. 65-73, June 1998, , CRL Publishing Ltd., UK.
- [22] Wael A. Farag, V.H. Quintana, and G. Lambert-Torres, "Neuro-Fuzzy Modeling of Complex Systems Using Genetic Algorithms", Proceedings of the IEEE International Conference on Neural Networks (IEEE ICNN'97), Vol. 1, pp. 444-449, June 8-12, 1997, Houston, Texas, USA.
- [23] Wael A. Farag, V.H. Quintana, and G. Lambert-Torres, "Genetic Algorithms and Back-propagation: A Comparative Study", proceeding of IEEE Canadian Conference of Electrical and Computer Engineering (IEEE CCECE'98), Vol I, pp. 93-96, May 1998, Waterloo, Ontario, Canada.
- [24] Wael A. Farag, "Building Fuzzy Logic Systems Using Clustering Algorithms", proceeding of the 22nd International Conference on Computers and Industrial Engineering (ICC & IE '97), pp. 312-315, Dec. 20-22, 1997, American University, Cairo, Egypt.
- [25] Wael A. Farag, "Digital Filters Design Using Artificial Neural Networks", Proceeding of the 22nd International Conference on Computers and Industrial Engineering (ICC & IE '97), pp. 68-71, Dec. 20-22, 1997, American University, Cairo, Egypt.
- [26] Wael A. Farag, V.H. Quintana, and G. Lambert-Torres, "Neural Network-Based Self-Organizing Fuzzy Logic Automatic Voltage Regulator for a Synchronous Generator", in the proceeding of the 28th Annual North American Power Symposium (NAPS'96), pp. 289-296, Nov. 10 -12, 1996, MIT, Cambridge, Massachusetts, USA. This paper is chosen as the **best paper** in the NAPS'96 paper award contest.

