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Salem ZERKAOUI

سالم مجيد العربي زركاوي

Marital Status Married
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Education

- **2008:** **Qualification** “Section 61: Computer Engineering, automatic and signal processing”, Ministry of higher education and research, France. *Qualified to apply as an Associate Professor in French Universities.*
- **2003-2007:** **Ph.D. Electrical Engineering**, University of Le Havre, France.
- **2002-2003:** **Master in Electronics and Electrical Engineering**, University of Le Havre, France.
- **2000-2002:** **Master in Control**, University of Sétif, Algeria.
- **1996-1999:** **Engineer in Telecommunications**, Telecommunications National Institute of Oran, Algeria
- **1994-1996:** **Preparatory years**, University of Sétif, Algeria.

Professional record

- **2014-present:** **Associate Professor**, University of Al Baha, Saudi Arabia.
- **2009-2014:** **Assistant professor**, University of Al Baha, Saudi Arabia.
- **2009:** **Postdoctoral**, MIS laboratory (Modeling, Information and Systems) at Picardie Jules Verne University, France.
- **2007-2008:** **Assistant professor**, University of Le Havre, France.
- **2006-2007:** Supervising Master’s degree student, University of Le Havre, France.
- **2004-2007:** **Lecturer**, University of Le Havre, France.

- **2003-2007:** **Researcher – Ph.D student**, “Power Engineering and Automatic Control Research Group” (GREAH), University Le Havre, France.
- **2002-2003:** **Research training**, GREAH laboratory, France.
- **2001-2002:** **Manager of Cyber Internet:** Management, service, and connection assistant, Sétif, Algeria.

Teaching Experience

- Measurement Software Tools and Process Control (LabVIEW)
- Matlab and C/C++ Programming
- Advanced Logic Design (FPGA)
- Mathematics
- Computer Networks
- Electrical Circuit Analysis
- Artificial Intelligence
- Advanced Lab In Electrical Engineering
- Microprocessor
- Microcomputer System Design
- Computer Organization
- Control Systems
- Logic circuit
- Digital Control
- Principles of Electrical Engineering
- Signals and Systems

Research topics

- Research Project no. 1434-49, sponsored by Deanship of Scientific Research, Albaha University under the title," Dissemination of Solar Water Heater Use in AL BAHA Region". (2014-2015).
- Research Project, sponsored by Deanship of Scientific Research, Albaha University under the title," Al-Mikhwa Green Energy Park Project". (2013).
- Power converters and control of renewable energy systems.

- Control design for hybrid electrical energy systems (application to electric vehicle).
- Adaptive control for unknown linear, nonlinear, SISO and MIMO systems.
- Stability and robustness of control systems.
- Observers for monitoring and diagnosis of nonlinear systems.
- Neural network control of an experimental robot arm.
- Development of an algorithm for image contours detection.
- Construction of a board interface on PCI bus.

Results and Publications

- 1 book.
- 2 Chapters in collective book.
- 10 Papers in international revues.
- 9 Publications in conferences with review committees and proceedings.
- 1 Seminar.

Additional information

- Sizing of hybrid photovoltaic-wind energy systems
- Installation and maintenance of computer networks.
- Microsoft Office tools: Excel, Word, Access, and PowerPoint.
- Programming language: Matlab/Simulink, C, C++, 8086 and PIC Microcontrollers assembler, LabVIEW.

Languages

Arabic (mother tongue), French (good level), English (medium level).

Miscellaneous

Chess, Foot-ball and Travelling.

References

Prof. Dimitri Lefebvre, University of Le Havre, e-mail: dimitri.lefebvre@univ-lehavre.fr, phone: +332.32.74.43.70. Prof. Lefebvre is my main thesis advisor.

Prof. Ahmed, EL Hajjaji, University of Picardie Jules Verne, e-mail: ahmed.hajjaji@u-picardie.fr, phone: +333 22 82 76 84. Prof. EL Hajjaji is a Dean of the College of Engineering.

Dr. Alain PIEL, University of Le Havre, e-mail: piel@univ-lehavre.fr, phone: +332. 32. 74. 43. 00. Dr. PIEL is a Dean of the College of Engineering.

Dr. Gamal A.W. Hazza, Faculty of Engineering-Al-Baha University, e-mail: warethg@yahoo.com.

Mobile: +966 597 962 870. Dr. Gamal is a Head of Electrical Engineering Department.

Publications

Doctoral Dissertation

- [1] “Modelling and robust adaptive control with recurrent neural networks for MIMO unknown non-linear systems”, *Doctoral Dissertation*, University Le Havre, France, October 18, 2007.

Book

- [2] Hazza G., Zerkaoui S., Al-Ghamdi S., “Dissemination of Solar Water Heater Use in Al Baha Region ”, *LAP LAMBERT Academic Publishing*, ISBN-13: 978-3-659-89128-1, May 18, 2016, p. 100.

Book Chapters

- [3] Lefebvre D., Zerkaoui S., Druaux F., Leclercq E., “Adaptive Control with stability and robustness analysis for nonlinear plant wide systems by means of neural networks”, *New Research on Nonlinear Analysis*, Nova Science Publishers, ISBN: 978-1-60456-359-7, 2008, pp. 187-212.
- [4] Zerkaoui S., Druaux F., Leclercq E., Lefebvre D., “Improving the robustness and stability properties of neural adaptive control for non-linear systems”, *Emerging Technologies, Robotics and Control Systems*, Salvatore Pennacchio, ISBN: 978-88-901928-5-2, 2008, pp. 248-254.

Publications in international revues

- [5] Leclercq E., Druaux F., Lefebvre D., Zerkaoui S., “Autonomous learning algorithm for fully connected recurrent networks”, *Neurocomputing*, vol. 63, 2005, pp. 25-44.
- [6] Zerkaoui S., Druaux F., Leclercq E., Lefebvre D., “Some Preliminary results about robust control based on RTRL algorithm”, *Best of Book 2005 AMSE - Association for Modelling and Simulation in Enterprises*, 2005, pp. 139-148.
- [7] Zerkaoui S., Druaux F., Leclercq E., Lefebvre D., “Improving the robustness and stability properties of neural adaptive control for non-linear systems”, *International Journal of Factory Automation, Robotics and Soft Computing*, 2008, pp. 81-87.
- [8] Zerkaoui S., Druaux F., Leclercq E., Lefebvre D., “Robust stability analysis of adaptive control based on recurrent ANN”, *International Journal of Modelling, Identification and Control*, vol. 5 (1), 2008, pp. 14-26.
- [9] Zerkaoui S., Druaux F., Leclercq E., Lefebvre D., “Stable adaptive control

with recurrent neural networks for square MIMO nonlinear systems”, *Engineering Applications of Artificial Intelligence*, vol. 22 (4-5), 2009, pp. 702-717.

- [10] Zerkaoui S., Druaux F., Leclercq E., Lefebvre D., “Indirect Neural Control for Plant-wide Systems: Application to the Tennessee Eastman Challenge Process”, *Computers and Chemical Engineering*, (2009), doi:10.1016/j.compchemeng.2009.08.003.
- [11] Zerkaoui S., Badran S., “Stable adaptive neural control of a robot arm”, *Intelligent Control&Automation*, (2012), doi: 10.4236/ica.2012.32016.
- [12] Zerkaoui S., “Online Hierarchical Controller for Hybrid Power System”, *ISRN Renewable Energy*, (2012), doi:10.5402/2012/148563.
- [13] Zerkaoui S., “On-line Fuzzy sliding mode controller for Hybrid Power System”, *Journal of Computations & Modelling*, vol.3 (1), 2013, pp. 33-55.
- [14] Hazza G., Zerkaoui S., Al-Ghamdi S., “Economic Feasibility of Using SWHs instead of EWHs in Al Baha Region of KSA”, *International Journal of Sustainable Energy and Environment*, Vol. 4, No. 1, February 2016, pp. 1-13, ISSN: 2327- 0330

Publications in conferences with review committees and proceedings

- [15] Zerkaoui S., Druaux F., Leclercq E., Lefebvre D., “Some Preliminary results about robust control based on RTRL algorithm”, *International Conference on Modelling and Simulation*, Rouen, France, 2005.
- [16] Zerkaoui S., Druaux F., Leclercq E., Lefebvre D., “Stable adaptive control with recurrent neural networks for square MIMO non linear systems”, *IFAC WC, International Federation of Automatic Control*, Prague, Tchèque, 2005.
- [17] Zerkaoui S., Druaux F., Leclercq E., Lefebvre D., “Commande adaptative par réseau de neurones hyper-connectés : étude de la stabilité et de la robustesse”, *Journées Doctorales et Nationales du GDR MACS*, Lyon, France, 2005.
- [18] Zerkaoui S., Druaux F., Leclercq E., Lefebvre D., “Robust stability analysis for indirect neural Adaptive control”, *Control 06 , International Conference Control*, Glasgow, Scotland, 2006.
- [19] Chaumont R., Vasselin E., Gorka M., Brethé J. F., Guérin F., Zerkaoui S., Druaux F., Leclercq E., Cachard O., Lefebvre D., “Structure semi active pour la robotique chirurgicale”, *Journées de la Section Automatique, Démonstrateurs en Automatique*, Angers 2006.

- [20] Zerkaoui S., Druaux F., Leclercq E., Lefebvre D., “Multivariable adaptive control for non-linear systems: Application to the Tennessee Eastman Challenge Process”, *European Control Conference*, Kos, Greece, 2007.
- [21] Zerkaoui S., Mboup A.B., Lefebvre D., Guerin F., Bosche J., EL Hajjaji A., “Sliding mode based control strategy for multi-sources renewable energy system”, *International Conference on Electric Power and Energy Conversion Systems*, American University of Sharjah, UAE, November, 2009.
- [22] Zerkaoui S., Bosche J., EL Hajjaji A., “Fuzzy sliding mode controller for multi-source renewable energy system”, *International Conference on Renewable Energy: Generation and Applications*, Al Ain, UAE, march, 2010.
- [23] Zerkaoui S., Bosche J., EL Hajjaji A., “On-line Control Strategy for Instantaneous Power Management of Hybrid Power System Based on Dynamic Fuzzy Logic Controller”, *7th IEEE Conference on Industrial Electronics and Applications (ICIEA 2012)*, Singapore, July, 2012.

Seminar

- [24] “Commande robuste et diagnostic des installations de grande dimension”, *séminaire d'inauguration du GRR SER (Grand Réseau de Recherche Sciences de l'Environnement, analyse et gestion des Risques)*, January 2008.