

CURRICULUM VITAE



PERSONAL DETAILS

Name: **Dr Arafat Zaidan**
Associate Professor
Age:

45

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Sex: Male

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Profile:

Control System Engineer with research experience in modern control strategies and plant supervision. Experience in the development of mathematical models and control strategies using C, C++ and Matlab. Substantial experience using Microsoft Office including Word 2003 . Experience in management and team leadership as well as public relations. Four years experience as lecturer in various control and electronics subjects. Extensive experience in Laboratory supervision and management

Currently working at the Hashemite University in Jordan as an assistant professor in the department of Mechatronics.

EDUCATION:

1996-2000 MPhil/PhD in Digital Control Engineering, University of Salford. Thesis title: “*DESIGN AND IMPLEMENTATION OF A CONTROL SYSTEM FOR A POWERED RECIPROCATING GAIT ORTHOSIS*”. The research was primarily concerned with deriving mathematical models and implementing a pole placement controller for a powered orthosis

1990-1993 B.Eng. (2.2Hons) Electrical & Electronic Engineering,
University of Leicester

Subjects Included: Mathematics, Control systems design, advanced control systems instrumentation and signal processing, Management methods and responsibilities, Digital circuits electromagnetism and applications, power electronics, Environmental engineering, Risk reliability and quality control, Power systems

1988-1990 BTEC National Diploma in General Engineering.
Hastings College of Arts and Technology. East Sussex. U.K.

1983-1988 Secondary School Education, Claverham Community
College. Battle, East Sussex

EMPLOYMENT:

2014-present day Dean of Technical college Kadoorie

2011-2014: Head of The electrical Department at PTUK

Head of the electrical engineering department
Electrical Engineering Department,
Palestine Technical University (Kadoorie) ,
Tulkarem – Palestine.

2008-2011: PALESTINE TECHNICAL UNIVERSITY (KODOORIE):

Assistant Professor at PTUK in the
Electrical and Electronics Department

2003- 2008: HASHEMITE UNIVERSITY IN JORDAN).

Assistant Professor at the Hashemite University
in the Mechatronics Department

2000-2002 University of Salford England. Part time assistant lecturer. Work involved was both theoretical and practical. I lectured various subjects including **Control Engineering (2nd and 3rd years), Digital Electronics (1st and 2nd year), Analogue Electronics (1st and 2nd years), Electronic Principles and Signal processing.**

1996-2000 Tutor University of Salford England. Work involved was to demonstrate and assist undergraduates in experimental work. The job was part time. This job was carried out during my PhD.

OTHER INFORMATION:

I was selected by the Pestalozzi Children's Village Trust in 1983 at the age of 11 years old from the west bank town of Tulkarm to study at the Trust. After having a good command of the British language I attended British state schools, college and university. In Addition to this I received support education in appropriate technology skills while living within the international community in the village.

The Pestalozzi Children's village Trust is a charitable organisation, which selects students from the developing countries and sponsors them during their educational life.

Languages: Fluent in Arabic and English both oral and written.

Interests: Reading, Computers and Internet, football, current affairs.

REFEREES

Dr Medrano-Cerda	Dr Ahmad Manasreh	Dr Mohammad Ababneh
University of Salford	Head of Electrical Eng Dept	Head of Mechatronics Dept
School of Acoustics	Hashemite University	Hashemite University
Frederick Road	P.O Box 150459.	P.O Box 150459.
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Research Abstract

The work undertaken during the PhD was to apply intelligent control to an electrically powered Orthosis. The purpose of the powered Orthosis was to help with the gait restoration of subjects disabled by paraplegia. The powered Orthosis was based upon a conventional Reciprocating Gait Orthosis, this being a device to which two direct drive electrical actuators providing assistance with the subjects hip motion.

The powered Orthosis developed for this project underpins an investigation considering both the high and low level control issues, as required for gait restoration. At the lower levels the issues addressed include the controller/plant stability, robustness and adaptation; whilst the higher level issues include gait phase generation, subject/machine performance.

To achieve the best performance from the mixed model, torque and velocity controllers in an environment where variations in the model system may be considerable and significant external disturbances may be present. To this end it will be necessary to consider dynamical controllers that demonstrate a greater degree of tolerance than found using conventional PID controllers. A suitable candidate controller may be found in the performance of high order pole assignment controllers.

A mathematical model using Lagrange equations was derived and then system identification was used to derive a mathematical model for the system. Both models were compared and the model derived using system identification was carried forward for the development of a controller. A high order controller was successfully designed and tested on normal subjects. The main difficulties in the PhD were solved and a working system designed.

Courses Taught

1. Electric Circuits 1
2. Electric Circuits 2
3. Control Systems (1+2).
4. Digital Control.
5. Electronics
6. Digital Electronics.
7. Electronics 2
8. Technical writing.
9. Electrical machines
10. Computer Aided Design
11. Digital Logic.
12. Various Labs.
13. Graduation Projects

PROJECTS

- 1- A 2 year duration World Bank Funded project with PTUK as the leader and in partnership with Columbia University (USA), Al-Najah University (Nablus), Al-Aroub College (Hebron). The main aim of the project was to develop a new curriculum for the Educational Technology program and to equip labs in order to train pre-service teachers and lectures in the use of technology in education
- 2- Joint 3 year tempus project with Beirzeet , the polytechnic, Salford university (England), Astia university (France). The main aim of the project is develop curriculum for a joint Msc program in Electrical and Electronic Engineering (JMEE) Joint Master in Electrical Engineering.

- 3- A 3 year tempus project (CODE) CURRICULA ORIENTED Development Education) with the Polytechnic, Beitzzeit and Alnajah universities from Palestine and French, Italian, Romanian universities. The aim to develop a BSc programme in Automotive Engineering
- 4- A 3 year Tempus project (ROMOR) Research Output Management through Open Access Repositories. A joint project between Palestinian universities (PTUK, Islamic university, Alquds Open university, Beir zeit) and International universities. Tawein(Austria), Parma(Italy), Brighton(United Kingdom).

WORKSHOPS

- 1- Involved in many workshops locally and at an international level. Some of These workshops are part of projects funded by The world Bank and Tempus

PUBLICATIONS

Journals

- 1) **A.Zaidan**, G.A. Medrano-Cerda and J.O.Gray, “*Computer Control of a Powered Reciprocating Gait Orthosis*” 23-24 September 1999, European Advanced Robotics Systems Development, Medical Robotics (EUREL).
- 2) Bashir Nouri ,**A.Zaidan** , “*Computer Control of a Powered Two Degree Freedom Reciprocating Gait Orthosis*” ISA Transaction. Volume 45, Number 2, April 2006, pages 249-258

3) **Arafat Zaidan**, Mutamed Khatib and Basim Alsayid, *A controlling Strategy for Industrial Machines using Bluetooth Technology*, International Journal of Latest Trends in Computing IJLTC, Volume 2, Issue 1, pp. 67-71, March 2011. (ISSN: 2045-5364).

4) **Arafat Zaidan** , Mutamed Khatib and Basim Alsayid, *Mobile SMS based controller with message feedback*, International Journal of Latest Trends in Computing IJLTC (UK), Volume 2, Issue 2, June 2011, pp. 269-257.(ISSN:2045-5364).

(5) Basim Alsayid, Abdel-Karim Daud and **Arafat Zaidan** ,*Simulation and Digital Control of Speed for Permanent Magnet Synchronous Motor with Space Vector Modulation*, European Journal of Scientific Research (EJSR), ISSN 1450-216X Vol.68 No.2 (January 2012), pp. 235-245 .

(6) Abdel-Karim Daud, Basim Alsayid and **Arafat Zaidan** , *DSP based simulator for field oriented control of the surface permanent magnet synchronous motor drive*, International Journal of Circuits, Systems and Signal Processing, Issue 1, Volume 6, February 2012, pp. 29-37.

(7) **Arafat Zaidan**, Bashir Y. M. Nouri and Basim Alsayid, *Swing Up a Pedulum by Energy Control*, International Journal of Engineering and Technology IJET UK, 2012. (ISSN: 2049-3444). (accepted).

Conferences

1) K.Daqrouq, **A.Zaidan** Prof R. Rymaszewski, " *Quality Evaluation Problems of the ECG Signal Processing Results*" Proceeding of the 5th International Conference, CATAEE, Amman-Jordan, 16-18 March 2004, pp195-200.

(2) Abdel-Karim Daud, Basim Alsayid and **Arafat Zaidan** , *DSP based speed control of the surface mounted permanent magnet synchronous motor with hysteresis current controller*, 15th WSEAS international conference on systems, July 2011, Greece (ISSN: 1792-4235).

(3) Basim Alsayid , Abdel-Karim Daud **and Arafat Zaidan** , *DSP base speed control of the surface mounted permanent magnet synchronous motor with Space Vector Modulation*, *The first international conference on renewable energies and vehicular technology REVET 2012* , 26-28 March 2012, Hammamet, Tunisia (accepted).

