Curriculum Vitae

Personal Details

Name	:	Prof. Dr. Mohammed Zeki AL-FAIZ
Date of Birth	:	04-Jan-1953
Nationality	:	IRAQI
Marital Status	:	Married
Current position	:	Dean, College of Information Engineering/ Al-Nahrain University
email	:	mzalfaiz12@gmail.com
Languages	:	Arabic, English, and Czech

Education

University Name	Degree	Issue Date		Country
University of Technology	B.Sc.	1976	Electronic Eng.	IRAQ
Brno Military Academy	M.Sc.	1983	Automation of Command, Electronic Computers	Czech Republic
Brno Military Academy	Ph.D.	1987	Technical Cybernetics	Czech Republic

Experience

June 2013 up to date	Dean, College of Information Engineering/Al-Nahrain University
Feb.2013 – June 2013	Prof. / Computer Eng. Dept./College of Eng./ Al-Nahrain University
Oct.2010-Feb.2013 Aug.2008-Sept.2010	Head of Computer Eng. Dept./Al- Nahrain University Prof. / Computer Eng. Dept./College of Eng./Al- Nahrain University
Aug.2006-Aug.2008	Visitor Professor /Electrical and Computer Eng. Dept./College of Eng. / Dohuk University- Dohuk Iraq
Mar.2003 July 2006	Head of Computer Engineering Department College of Engineering/Nahrain University Baghdad
Nov.2001-Mar.2003	Head of Laser Engineering Department College of Engineering /Nahrain University
Nov.1999-Feb.2001	Ass. Prof. at College of Engineering / Nahrain University
Jul.1995-Nov.1999	Associate Professor Military Academy , Baghdad-Iraq

Feb.1992-Jul.1995	Head of Aeronautical Armament Engineering Department Military Engineering College, Baghdad-Iraq
Mar.1987-Jan.1992	Lecturer at Electrical and Electronic Engineering Department Military Engineering College, Baghdad-Iraq

Membership of Professional Institutions
1. Member of the Institute of Electrical and Electronic Engineers (IEEE)
2. Consultant Engineer of the Iraqi Union Engineering.
3. Member of the Iraqi Engineering Society.

Academic Experiences:

I have taught many subjects (1987–2007) such as: *Electrical Circuits ,Electronics, Digital Electronics, Mathematics and Numerical Computations, Automatic Control for undergraduate students. Soft Computing(Artificial Neural Network, Fuzzy Logic ,and Genetic Algorithm), Modern Control, Digital Control, Optimal Control, Satellite Attitude Control), Advanced Numerical Analysis, Robotics and Automation for postgraduate students* .
These subjects had been given in the following faculties:
- University Of Technology.
- University Of Baghdad.
- Military Engineering College.
- Nahrain University.
- Dohuk University.

Research Activities:
- More than 50 published papers.
- Two books in Arabic language.
- Chapter in a Book, 2012.
- Building a Wired Lan-Based Mobile Vehicle Interface. Lambert Academic Publishing 2014.

Postgraduate Supervision :
a- M.Sc. Projects:

I have supervised successfully the following postgraduate students as :
1. Combined Guidance System for SAM , MEC Baghdad , 1990.
2. Personal Computer-Based Controller for Research Reactor, University of Baghdad , 1995 .
3. Design and Analysis of Discrete Longitudinal Autopilot for BTT Missile, MEC Baghdad 1996 .
4. Singular Perturbation Methodology Application to the Problem of Flight Control ,Control and Systems Eng. Dept. , University Of Technology ,1996.
5. Identification and Control of Dynamical System Using Neural Networks, MEC Baghdad , 1997 .
6. Design and Evaluation of ANN Algorithm for Identification and Control Applications , Computer Eng. Dept. ,Saddam University, 1998 .
7. Design and Evaluation of Neuro-Identifier and Controller for Nonlinear Dynamical System , University of Baghdad , 1999.
8. Simulation and Evaluation of Flexible Robot Arm Manipulator Based on SPT , Computer Eng. Dept. ,Saddam University , 1999 .

9. **Fuzzy Control System for Dual-Spin Satellite ,Electronic and Comm. Eng. Dept. , Saddam University , 2001.**

10. **Analysis of Passive Homing Guided Missile , MEC Baghdad ,2001 .**

11. **Neuro-Controller for Satellite Attitude Control , Electronic and Comm. Eng. Dept. , Saddam University , 2001.**

12. **A Proposed Anti Jamming Method for an IR Homing Devices ,MEC Baghdad , 2001 .**

13. **Optical System Controllable by NN to Measure THF (MTF) ,Laser Eng. Dept. , Saddam University, 2001 .**

14. **Design of Neuro-Controller for Servo TV Tracking System ,Computer Eng. Dept. , Saddam University , 2001 .**

15. **Hybrid Fuzzy Controller for Laser Detection and Tracking System, Institute of Laser and Plasma for Postgraduate Studies ,University of Baghdad , 2001 .**

16. **Design and Performance Analysis of Laser Guidance System, Laser Eng. Dept. , Saddam University , 2002 .**

17. **Generation of Steering Commands for Strapdown Inertial Navigation System Using Neuro-Controller , MEC Baghdad , 2002 .**

18. **Satellite Range Estimation Using the Extended Kalman Filter , Electronic and Comm. Eng. Dept. , Saddam University , 2003 .**

19. **Adaptive Fuzzy Controller for 3D Laser Detection and Tracking System , Institute of Laser and Plasma for Postgraduate Studies ,University of Baghdad , 2003 .**

20. **Design and Analysis of Laser Guidance System Using Detector Array, Laser Eng. Dept. ,Nahrain University 2004 .**

21. **Adaptive Fuzzy Controller for Cardiac Pacemaker System , Medical Eng. Dept. , Nahrain University , 2004 .**

22. **Fuzzy Classifier for Laser Diagnosis of Haematological Diseases , Laser Eng. Dept. , Nahrain University , 2005 .**

23. **Building a Wired LAN-Based Mobile Vehicle Interface , Computer Eng. Dept. , Nahrain University , 2006 .**

24. **Design and Implementation of an Artificial Intelligent Controller for Medical Application (EEG) Based on Virtual Reality Techniques , Control and Systems Eng. Dept. , University of Technology , 2007 .**

25. **Design and Implementation of an AI Controller Based on Brain Computer Interface , Computer Eng. Dept. , Nahrain University , 2007 .**

26. **Remote Control for Robotic Manipulator Through the Internet , Computer Eng. Dept. , Nahrain University , 2007 .**

27. **Simulation of 3D Laser Scanner and Dimension Control, Laser and Optoelectronic Eng. Dept., Nahrain University , 2008.**

28. **Fuzzy Controller Based Genetic for Congestion Avoidance of Computer Network, Computer Eng. Dept., Nahrain University , 2010 .**

29. **A Proposal for Virtual Cylindrical Manipulator with Wrist End-Effecter, Computer Eng. Dept., Nahrain University , 2011 .**

30. **Design of LQ-Servo Controller based on Intelligent Systems for Computer Network Congestion Avoidance, Computer Eng. Dept., Nahrain University , 2011 .**

31. **Design and Analysis for Wireless Sensor Network**

b- Ph.D Projects :

I have supervised successfully the following postgraduate students as :

1. Hybrid Force/Position Control of Robotic Manipulator Using FSPT, Electrical Eng. Dept., University of Baghdad ,2000.
2. Effective Energy Management for Medium Range Missile Using Pulse Ignition Control Motor, Military College of Engineering, Baghdad, 2001.
3. NeuroFuzzy Controller Design for Robotic Manipulator, Control and Computers Eng. Dept., University of Technology ,2003 .
4. Design of Kalman Filter for Augmenting GPS to INS System , Computer Eng. Dept., Nahrain University, 2003 .
5. Design of Neuro-Fuzzy Controller Based on Genetic Algorithm With Application to Water Level Tank ,Computer Science Dept. ,University of Technology ,2003.
6. Design and Analysis of Adaptive Fuzzy Controllers for Self Guided Vehicle, Al-Rasheed College of Engineering And Science, University of Technology, 2004 .
7. Design of a Virtual Reality System of Electron Beam Bunch Distribution in Free Electron Laser ,Laser and Optoelectronic Eng. Dept., Nahrain University , 2005 .
8. Proposed Inverse Kinematics Algorithm and AI Controller for TIP Position Robotic Manipulator, Electronic and Communications Eng. Dept. ,Nahrain University , 2005 .
9. AI Controller for Air Traffic System, Computer Eng. Dept. ,Nahrain University, 2005.
10. Design and Analysis of Diod Laser System Based on Virtual Reality Technique , Laser and Optoelectronic Eng. Dept. , Nahrain University ,2006 .
11. Design and Construction of Er:YAG Laser for Medical Applications , Laser and Optoelectronics Eng. Dept. , Nahrain University , 2006 .
12. Design and Analysis of Virtual Human Arm driven by EMG Signal, Al-Rashid College of Engineering and Science, UOT, Baghdad, 2009.
13. A Posture of Artificial Human Arm Based Optimization Technique With Environment Reality, Elect. Eng. Deprt., University of Basrah, 2011.
14. Design and Implementation of Fuzzy Controller Based on Optimization Algorithms for Tip Position 6 DOF Robotic Manipulator, Al-Rashid College of Engineering and Science, UOT, Baghdad, 2012.
15.

Engineering Experiences:

Since 1987 till now I have been involved in the following practical engineering works:
- (1987–1999) Design and Consultant engineer for several governmental engineering projects (Control Engineering & Flight Control in Real Time Implementations).
- (1999 – 2003) Design of many process controllers for several governmental companies.
- Design of software packages for process control in real time applications.
- Consultant engineer for several projects in Iraqi Oil Sector (DCS & PLC systems).
- Design of many electrical projects (Emergency Unit of Al-Yermook Hospital, Internet Hall, Student Union Building ...etc), 2005.
- Assessment and design of HVAC system for AHU of Baghdad Railway Station,
- Nahrain University campus, College of Law, College of Medicine, 2005.
- Supervisor and Consultant Engineer of Instrumentation and Control Systems (SCADA and PLC Systems) for Haditha Diesel Power Station, 2006.
- Design of SCADA+PLC system for Chamchemal Water Treatment Plant, 2008.
- Consultant engineer and Design Approval of SCADA System for Shark Dijla Water Treatment Plant, 2009.
- Consultant engineer and Design Approval of SCADA System for Al-Rashid Water Treatment Plant, 2010.
- Design of Electrical and PLC-Based Control System for NAMAB Bulk Fuel Facilities System, 2010.
- Consultant and Supervision for Electrical and Control System Design Approval for Basrah Sport City, 2010-Till now.
- Consultant and Supervision for Electrical and Control System Design Approval for Child Cultural City, 2012-Till now.
- Consultant and Supervision for Electrical and Control System Design Approval for AlKoot Olympic Stadium, 2012-Till now.
-

Publications (Examples):

1. M.Z. Al-Faiz "Singular-Perturbation Based Guidance Laws" Proc. of the 2nd Iraqi Con. on Eng. For the Ministry of Higher Education and Scientific Affair, Mousel University, 1988.

2. M.Z. Al-Faiz and N.I. Ahmed "Terminal Homing Guidance" Proc. of the 1st Basrah Electrical Engineering Symposium , 1992.

3. Y.A. Faraj and M.Z. Al-Faiz " Aircraft Altitude Control System Using Linear State Feedback " Proc. Of the MEC 2nd Eng. Con. , Baghdad , 1994 .

4. M.Z. Al-Faiz " Serial Combined Guidance " Journal of the Military College of Engineering , No.13, 1994 .

5. M.Z. Al-Faiz and A.R. Al-Rikabi "Discrete Longitudinal Autopilot for Bank-To-Turn Missile " 1st Baghdad Conference for Electrical Engineering, UOT 1997 .

6. M.Z. Al-Faiz and H.A. Hussain " Optimal Autopilot Design for BTT Missile" Engineering Journal, UOB, Vol.4, No.2, 1998 .

7. M.Z. Al-Faiz and Z.M. Al-Muktar " Three Dimensional Flight Control Using Singular
Perturbation Method " Engineering Journal, UOB, Vol.5, No.1, 1998

8. M.Z. Al-Faiz"Hybrid Fuzzy Controller for High Order Non-Linear System"4th JIEEEC 2001 Jordan .

9. R.A. Maher, M.Z. Al-Faiz, N.M. Noaman" Pulse Ignition Control Motor for Medium Range
Air-To Air Missile " Journal of Computers ,Communication , Control and System Eng. ,
Vol.1 , No.2, UOT 2001 .

10. M.Z. Al-Faiz, S.A. Meki, and Y.I. Al-Mashhidina " 3-D Neuro-Controller for BTT-CLOS
Missile " Journal of Computers ,Communication , Control and System Eng. , Vol.1 , No.3, UOT 2001 .

11. M.Z.Al-Faiz and O.A. Ali " Initial start-up and stabilization of Rotational Inverted pendulum
using two fuzzy controllers" 4th JIEEEC 2001 , Jordan .

12. W.A. Mahmoud, M.Z. AL-Faiz, E.B. Egab "Constrained Hybrid Force/Position Control of
Manipulator " A.M.S.E. Vol. 71 No.3 , 2002 France .

13. E.G. Yousif, M.Z. Al-Faiz, and B.B. Al-Bahri "Laser Detection and Tracking System Using
Array of Photodiodes with Fuzzy Logic Controller" Iraqi Journal of Laser, Vol.1, No.1, 2002 .

14. M.Z. Al-Faiz, A.A. Ali, and R.A. Feyad " Determination and Analysis of an IR Radiation for
Homing Guided Missile " Journal of Eng. College, Saddam University,Vol.6 No.1, 2002.

15. Y.I. Al-Mashhidini and M.Z. Al-Faiz " Direct Neuro-Adaptive Controller Based on Finite Recurrent Back-
Propagation (FRBP) Network" 4th International Conference on Computational Aspects and
Their Applications in Electrical Eng,(CATAEE) Jordan 2002 .

16. M.Z.AL-Faiz, Esam G. Yousif, Baker B. Al-Baker "Hybrid Fuzzy Logic Control for Practical
Laser Detection and Tracking System(LDTS)" . MICATE 2002 Minia Egypt.

17. M.Z. Al-Faiz , E.A. Al-Khalidy " Parallel Thresholding Algorithm for TV Tracking System
Using Neural Network "Journal of Eng. College, Saddam University,Vol.6 No.3, 2002.

18. M.Z. Al-Faiz and S.A. Ismaeel "Design of Kalman Filter for Augmenting GPS to INS System"
International Conference on Advanced Remote Sensing for Earth Observation System, Techniques
and Application, KSA 2005 .

19. M.Z. Al-Faiz and Atheer K. Al-Ibrahimi "Adaptive Fuzzy Controller for a Platform of
TV-Tracking System" .16th International Conference on Computer Theory and Applications
(ICCTA 2005) Egypt .

20. M.Z. Al-Faiz and S. Kamal " Design of Neuro-Fuzzy Controller for Water-Level Tank Utilizing Genetic
Algorithms " MICATE' 2005 Minia Egypt .

21. M.Z. Al-Faiz, M.Z. Othman,S.S. Mahdi and B.B. Al-Bahri "Design and Implementation of a Real Time
Multilayer Fuzzy and Neural Controller for 6 DOF Robotic Manipulator under
MATLAB Operation "6th JIEEEC 2006 , Jordan .

22. M.Z. Al-Faiz ,M.Z. Othman and B.B. Al-Bahri " An Algorithm to Solve the Inverse
Kinematics Problem of a Robotic Manipulator Based on Rotation Vectors" 3rd IEEE-GCC 2006, Bahrain.

23. M.Z. Al-Faiz and A.K. Abbas "Adaptive Controller for Cardiac Pacing Therapy
Based on Fuzzy Logic Control " The First European Jordanian International Medical Informatics
and Biomedical Engineering Symposium(IMIBE 2006) , Jordan .

24. M.Z. Al-Faiz and O. Mubesher, "Object Dimension Inspection Utilizing 3D Laser Scanner", 1st Regional
Conference for Engineering Sciences,Nahrain University-Iraq, 2008.

25. M.Z. Al-Faiz," LINEAR TRACKING PROBLEM APPLICATIONS FOR A RESEARCH REACTOR USING GENETIC ALGORITHM APPROACH", Journal of College of Engineering, UOB, Vol. 9, No.3 2008.

26. M.M. AL-Khalidy, R.A.Mahir, and M.Z. Al-Faiz" Implementing of Multi Fuzzy Controllers for Multi Sensors to Steer Wheeled Mobile Robot", 3rd INTERNATIONAL CONFERENCE ON MODELING, SIMULATION, AND APPLIED OPTIMIZATION (ICMSAO'09), Sharjah, UAE, 2009.

27. M.Z. Al-Faiz and R.H. Al-Khayali "Design of a PLC-Based SCADA System for Chamchamal Water Treatment Plant", The 1st Computer Applications, Babyle-Iraq, 2009.

28. M.Z. Al-Faiz and Y.I. Al-Mashhadani," Analytical Solution for Anthropomorphic Limbs Model, (IK of Human Arm)", IEEE Symposium on Industrial Electronics and Applications, Malaysia, (ISIEA 2009).

29. M.Z. Al-Faiz and Y.I. Al-Mashhadani," Human Arm Movements Recognition Based on EMG Signal", MASAUM Journal of Basic and Applied Sciences,Vol.1, Issue. 2, 2009.

30. M.Z. Al-Faiz," Inverse Kinematics Solution for Robot Manipulator Based on Neural Network", MASAUM Journal of Basic and Applied Sciences,Vol.1, Issue. 2, 2009.

31. M.Z. Al-Faiz," A Posture Anthropomorphic Robotic Arm by Inverse Kinematic With Virtual Environment", MASAUM Journal of Basic and Applied Sciences,Vol.1, Issue. 4, 2009.

32. M.Z.Al-Faiz, A.A.Ali,A. H.Miry,"Solution of Human Arm Inverse Kinematics Based on composed Damped Least Squares Optimization", IEEE 2nd Computer Science and Electronic Engineering Conference, University of Essex, UK, 2010.

33. M.Z. Al-Faiz, A.A.Ali, A.H. Miry " A k-Nearest Neighbor Based Algorithm for Human Arm Movements Recognition Using EMG Signals", Proceeding of the IEEE 1st International Conference on Energy, Power, and Control, Basrah, 2010.

34. M.Z. Al-Faiz and A.A. Majeed,"Fuzzy-Genetic Controller for Congestion Avoidance in Computer Networks", Engineering Conference of Control, Computers and Mechatronics(ECCCM 2011), UOT, Baghdad, 2011.

35. M.Z. Al-Faiz, A.A.Ali, A.H. Miry," Human Arm Simulation Based on MATLAB with Virtual Environment", Engineering Confernce of Control, Computers and Mechatronics(ECCCM 2011), UOT, Baghdad, 2011.

36. M.Z. Al-Faiz, A. A.Ali & A. H.Miry" Human Arm Inverse Kinematic Solution Based Geometric Relations and Optimization Algorithm" , International Journal of Robotics and Automation(IJRA), Volume (2) : Issue (4), 2011.

37. M. Z. Al-Faiz & M. S. Saleh" Inverse Kinematics Analysis for Manipulator Robot with Wrist Offset Based On the Closed-Form Algorithm" International Journal of Robotics and Automation (IJRA), Volume (2) : Issue (4), 2011.

38. M. Z. Al-Faiz , A. A.Ali ,A. H. Miry" GUI Simulation for Movement of Human Arm Driven by EMG Signal", Eng. And Tech. Journal, UOT,Vol. 29, No. 8, 2011.

39. Mohammed Z. Al-Faiz, Shahad A. Sadeq," Particle Swarm Optimization Based Fuzzy-Neural Like PID Controller for TCP/AQM Router", Scientific Research Publications(Intelligent Control and Automation), Vol.3, No.1, 2012 (http://www.SciRP.org/journal/ica).

40. Mohammed Z. Al-Faiz and Liqaa S. Mezher, " Cathodic Protection Remote Monitoring Based on Wireless Sensor Network", Scientific Research Publications (Wireless Sensor Network), Vol. 9,No.3, 2012.

41. Mohammed Z. Al-Faiz and Sarmad H. Ahmed, "Classification of the Electromyography Signal Based on Feature Reduction Representations", Proceeding of the 1st WSEAS International Conference on Information Technology and Computer Networks(ITCN'12), Austria 2012.

42. M.Z. Al-Faiz and Abbas H. Miry," Artificial Human Arm Driven by EMG Signal", INTEK Publications(MATLAB-A Fundamental Tool for Scientific Computing and Engineering Applications), Vol. 1, ISBN: 978-953-51-0750-7, 2012.

43. . Mohammed Z. Al-Faiz and Sarmad H. Ahmed," Discriminant Analysis for Human Arm Motion Prediction and Classifying", Scientific Research Publications(Intelligent Control and Automation), Vol.4, No.1, 2013 (http://www.SciRP.org/journal/ica.

44. Mohammed Z. Al-Faiz1, Mohammed S. Saleh2, Ahmed A. Oglah3'' Type-2 Fuzzy Logic Controllers Based Genetic Algorithm for the Position Control of DC Motor'', Scientific Research Publications(Intelligent Control and Automation), Vol.4, No.1, 2013 (http://www.SciRP.org/journal/ica.