Assoc. Prof. Refaat Mohammed Fikry Abou-Zaid

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Personal Data:

Address	**:**	29, Kafr Essam St., Tanta, Egypt
Date Of Birth	**:**	Oct 1, 1979.
Marital Status	**:**	Married. And I have 3 children
Military Services	**:**	Free
MEMBERSHIP	**:**	Member of Egyptian Engineers Syndicate

Education:

University Degree: B.Sc. in Electrical Engineering, Computers & Automatic Control Dept, Faculty of Engineering, Tanta University 2001.
Graduation Project Subject: Design and Performance of Adaptive Digital Filter
General Grade: Very Good (with Honor Degree).
Project Grade: Excellent.

M.Sc.: in Electronic Measurement & Automatic Control, Electronic Measurement & Automatic Control Dept, Faculty of Engineering, Menoufia University, 2008.
Thesis Title: Design of Controller for Control Rod of Research Reactors.

Ph.D.: in Electronic Measurement & Automatic Control, Electronic Measurement & Automatic Control Dept, Faculty of Engineering, Menoufia University, 2014.
Thesis Title: Advanced Techniques for Design and Implementation of Fast Real-Time Image Processing.

OCCUPATION:

- Demonstrator in Nuclear Research Center – Egyptian Atomic Energy Authority, from Jan, 2003 till 2008.

- Assistant Lecturer in Engineering Dept.- NRC, EAEA, from 2008 till 2014.

- Lecturer in Engineering Dept.- NRC, EAEA, from 2014 till 2021.

- Associated Professor in Engineering Dept. – NRC, EAEA, from 2021 till now.

- Head of Electrical Department – Higher Institute of Engineering and technology – HIET, from November 2021 till 2022.

- Head of Communication and Computers – The Higher Institute of Engineering and Technology – Tanta – THIET, from September 2023, Till Now.

- Vice Dean of Students Affairs - The Higher Institute of Engineering and Technology – Tanta – THIET, from September 2023, Till Now.
- General Supervisor on IT unit - The Higher Institute of Engineering and Technology – Tanta – THIET, from September 2023, Till Now.

EXPERIENCE:

- I worked as a programmer using Visual Basic 6.0 and Oracle 8i programs in a Programming Company in Cairo.(May, 2002 – December, 2002).
- Expert in C, C++ Language and Data structure algorithms.
- I worked as Instructor in IBM company in Tanta to teach some courses (such as C Language, C++ Language, Visual Basic 6.0, Visual Basic.Net, Data Structure Courses. (March 2002, March 2005).
- Expert in data acquisition systems, PC control and Interfacing.
- Good Knowledge about Information and Communication Technology (ICT) equipment and materials.
- Familiar with Mentor Graphics packages for designing VLSI circuits.
- Expert in Computer interface, Microcontrollers chips (PIC, ATMEGA…) and some novel kits like Arduino, Raspberry Pi.
- Good Knowledge about Networks.
- Familiar with Some SIEMENS and ZELIO PLC Programming. (By Ladder Diagram Programming).
- I shared my colleges in upgrading some equipment in engineering department, NRC, EAEA.
- Expert in FPGA technology and I have good experience with some kits of it and I made complex projects on it (Image processing applications, MCA, Motor Controller …).
- Expert in some FPGA packages (Xilinx System Generator, LabVIEW FPGA, Handel-C, Mentor Graphics,…..).
- I teach some courses in The Higher Institute of Engineering Technology (THIET) in Tanta like (Digital Logic, Microprocessor, Power Electronics, Computer Networks, Computer Architecture and Organization, Software Engineering, and Embedded System) from 2016 till now.
- I supervised on some graduation projects in THIET like (Elevator Control System, train Gateway Control System, Employee Attendance System based on Face Recognition, Student Affair System, Controlling of Robot Hand Remotely, CNC Machine, and LTE physical layer based on FPGA).
- I teach some courses in Higher Institute of Engineering Technology (HIET) in Kafr El-Sheikh like (Computer Engineering, Systems and Networks, Instrumentations and Measurements, Algorithms Design and Analysis, data structure and Algorithms) from 2018 till now
- I teach some courses in New Cairo Technology University like (Machine Learning, Medical Mechatronics) from 2023.

TRAINING:

- Regional (AFRA) Training Workshop on effective utilization on modern troubleshooting tools and instruments, 4-15 Oct. 2003, Cairo, Egypt.
- Regional (AFRA) "Train-the-Trainer" Workshop on Nuclear Electronics and

- Troubleshooting using the Developed ICT Packages, 20-24 March 2004, Algiers, Algeria.
- Regional (AFRA) Training Workshop on QA/QC for Maintenance and Repair of Nuclear Instruments, 12 - 16 June 2004, Cairo, Egypt.
- Group Fellowship Training In "Nuclear Spectroscopy Instrumentation Maintenance", 2005-2006, Austria.
- Regional (AFRA) Training Workshop on Use of Digital Signal Processing (DSP) in Modern Spectrometric Systems, 3-7 Sept. 2006, Cairo, Egypt.
- Regional (AFRA) Training Workshop on Interfacing Sensors through PLCs to Modern Nuclear Instruments, 24-28 November 2008 Addis Ababa, Ethiopia.
- Regional (AFRA) Training Fellowship on Modern Techniques in Designing and Development of Nuclear Instruments 15th June – 14th July 2009, Julich, Germany.
- Regional AFRA Training Course for Developers of ICT Materials (Advanced), 13-17 June 2010, Cairo, Egypt.
- Regional AFRA Training Course on Strengthening National Facilities for the Maintenance and Repair of Medical and Scientific Instruments (AFRA IV-14), 2-6 August 2010, Siebersdorf, Austria.
- Regional AFRA Training Course for Developers of ICT Materials (Advanced), 16-20 May 2011,Tunisia, Tunis.
- Regional Training Course on Advanced Maintenance and Repair of MEDISO Spirit Gamma Cameras ,4 – 8 July 2011, IAEA Laboratories Seibersdorf – Austria.
- Regional AFRA Training course on Protection of Sensitive Nuclear Equipment, 19-23 May 2014, Lusaka Zambia.
- Regional AFRA Training Course on Networking of Wireless Sensors, 7-11 September 2014, Cairo, Egypt.
- Regional (AFRA) Training Fellowship on Nuclear Instrumentation, Electronics and Reactor Control, 4th Jan – 2nd April 2015, IAEA, Austria.

Special Skills

Language Skills :

Arabic **:** Mother Tongue.
English **:** Good Command of English (written & spoken).

Computer Skills :

- *Operating System Skills*

- Windows OS such as: Windows 9x, WindowsXP, Windows7, Windows 8, and Windows 10.
- Linux OS such as: Ubuntu 14, Linux Mint 17.3, Fedora, and Rasberry-Pi OS like Raspbian (Wheezy, Jessi, Stretch), and NOOBS.

- *General Program Skills*

- Microsoft Office.

- Internet & Network Essentials.
- ***Database Programming Skills***
- SQL Server, Oracle , and MySQL.
- ***Programming Languages Skills***
- QBasic, Visual Basic 6.0, C, C++, Visual Basic.NET, C #, Python.
- ***Application Program Skills***
- MATALAB-based system applications (Fuzzy logic, Neural Network, Deep learning, Control System and applications using m-file programming and SIMULINK).
- Machine Learning algorithms using MATLAB Toolboxes and Python Language.
- LabVIEW Graphical Programming Language.
- ***PCB Design and Simulation Skills***
- PROTEL Application program for designing schematic and PCB circuits.
- Proteus.
- Eagle.
- ***PLC Programming Skills***
- ZELIO and SIEMENS PLC Ladder diagram programming.
- ***Web Design and Developments Skills***
- HTML, CSS, JavaScript.
- Web Development Programming (PHP, ASP.NET).
- CMS Website Design (Wordpress, DotNetNuke, Joomla).
- ***Multimedia Skills***
- Macromedia Flash, Adobe PhotoShop, Adobe Illustrator.
- ***Embedded Systems Skills***
- Microcontroller programming language (Micro-C, Bascom, Proton).
- Arduino programming and interface.
- VHDL language.
- Packages for FPGA applications (Xilinx System Generator, LABVIEW FPGA, Mentor Graphics, Handel-C).
- Raspberry Pi programming and interface.
- IOT application system.

PUBLICATIONS:

- R. M. Fikry, M. M. Elbardini, S. A. Shehata, S. M. Elaraby and M. I. Mahmoud, "**Hardware-in-the-Loop Simulation for the Automatic Power Control System of Research Reactors** ", *Arab Journal of Nuclear Sciences and Applications*, 2008.

- R.M. Fikry, S.A. Shehata, F.E. Abd El-Samie, S. M. Elaraby and M. I. Mahmoud; "Design and Implementation of a Fast General Purpose Fuzzy Processor", 1st International Conference on Electrical and Computer Systems Engineering (ECSE'10); MSA, pp. SCT3(1-9) 2010.

- R.M. Fikry, S.A. Shehata, F.E. Abd El-Samie, S. M. Elaraby and M. I. Mahmoud; "**Fast and Robust Real-Time Face Detection System using FPGA-based General Purpose**

Fuzzy Processor", International Journal of Information Technology and Electrical Engineering (ITEE); Vol.2, Issue 1, pp.38-46, 2013.

- R.M. Fikry, S.A. Shehata, F.E. Abd El-Samie, S. M. Elaraby and M. I. Mahmoud;" **Design and Implementation of a Fast General Purpose Fuzzy Processor**". International Journal of System Dynamics Applications (IJSDA), Vol.2, Issue 4, pp.1-18, 2013.

- E. A. Elshazly, Safey A. S. Abdelwahab, R. M. Fikry, O. Zahran, S. M. Elaraby and M. El-Kordy, **"FPGA Implementation of Image Steganography Algorithm using Modified LSB Technique"**, published in Menoufia Journal of Electronic Engineering Research (MJEER), Volume 27, No. 2, pp. 389 – 406, July 2018.

- E. A. Elshazly, Safey A. S. Abdelwahab, R. M. Fikry, O. Zahran, S. M. Elaraby and M. El-Kordy, **"A Secure Image Steganography Algorithm Based on Least Significant Bit and Integer Wavelet Transform"**, published in the Journal of Systems Engineering and Electronics, IEEE, Vol. 29, No. 3, pp. 639 – 649, June 2018.

- E. A. Elshazly, Safey A. S. Abdelwahab, R. M. Fikry, O. Zahran, S. M. Elaraby and M. El-Kordy, **"FPGA Implementation of Image Steganography Algorithms using Generalized Exploiting Modification Direction and Pixel Segmentation Strategy**", proceedings of the 35th National Radio Science Conference (NRSC 2018), IEEE, pp. 258 – 265, Cairo, Egypt, 20 – 22 March, 2018.

- E. A. Elshazly, Safey A. S. Abdelwahab, R. M. Fikry, O. Zahran, S. M. Elaraby and M. El-Kordy, **"FPGA Implementation of Robust Image Steganography Technique Based on Least Significant Bit (LSB) in Spatial Domain"**, published in International Journal of Computer Applications (IJCA), Volume 145, No.12, pp. 43 – 52, July 2016.

- E. A. Elshazly, Safey A. S. Abdelwahab, R. M. Fikry, O. Zahran, S. M. Elaraby and M. El-Kordy, **"A Survey of Different Steganography Techniques"**, published in Menoufia Journal of Electronic Engineering Research (MJEER), Volume 25, No. 1, pp. 67 – 102, January 2016.

- M. R. Hassan, R. M. Fikry, and S. M. Yakout, "**Artificial Neural Network Approach Modeling for Sorption of Cobalt from Aqueous Solution Using Modified Maghemite Nanoparticles**," *Journal of Environmental Engineering,* vol. 146, p. 04020013, 2020.

- M. Hammad, H. Kasban, R. Mohamed Fikry, M. I. Dessouky, O. Zahran, S. Elaraby, et al., "**Pile-up correction algorithm for high count rate gamma ray spectroscopy**," Applied Radiation and Isotopes, vol. 151, 06/01, 2019.

- M. Hammad, M. I. Dessouky, O. Zahran, H. Kasban, S. Elaraby, and F. Abd El-Samie, "**Efficient Signal Processing Techniques for Distillation Column Malfunctions Identification**," Journal of Nondestructive Evaluation, vol. 34, 09/16, 2015.

- M. Hammad, H. Kasban, R. Mohamed Fikry, M. I. Dessouky, O. Zahran, S. Elaraby, et al., "**Digital pulse processing algorithm for neutron and gamma rays discrimination**," Analog Integrated Circuits and Signal Processing, vol. 101, 12/01, 2019.

- M. Hammad, H. Kasban, R. Mohamed Fikry, S. Elaraby, M. I. Dessouky, O. Zahran, et al., "**Efficient Discrimination of Neutron and Gamma Rays using Different Digital**

Pulse Processing Algorithms," Menoufia Journal of Electronic Engineering Research, vol. 29, pp. 1-8, 07/01, 2020.

- M. R. Hassan, R. M. Fikry, and M. I. Aly, "**Black box dynamic modeling of Co(II) ions removal from aqueous solution using modified maghemite nanoparticles by fixed-bed column based on deep neural networks**," Chemical Papers, 2020/09/03 2020.

- Fikry R.M., Kasban H. (2021) **Deep Neural Networks for Landmines Images Classification**. In: Hassanien A.E., Slowik A., Snášel V., El-Deeb H., Tolba F.M. (eds) Proceedings of the International Conference on Advanced Intelligent Systems and Informatics 2020. AISI 2020. Advances in Intelligent Systems and Computing, vol 1261. Springer, Cham.

Submitted Articles:

- M. E. Hammad, H. Kasban, R. M. Fikry, M. I. Dessouky, O. Zahran, S. M. S. Elaraby and F. E. Abd El-Samie, "**Design of an Improved Digital Pulse Processor for Nuclear Gamma Ray Spectroscopy**", Submitted in Nuclear Instruments and Methods in Physics Research.

- R.M.Fikry, Z.Elsharkawy, "**Improvements of Detection and Classification of Flaws in Weld Radiography Images,**" Submitted in Arab Journal of Nuclear Sciences and Applications.

- Mohamed S. El_Tokhy, Elsayed H. Ali and Refaat. M Fikry, "Contrast Transfer Characteristics of Integrated Images Based on Optoelectronic Integration between Quantum Well Photodetector and Light Emitting Diode", Submitted in Arab Journal of Nuclear Sciences and Applications.

- Refaat M. Fikry, Mohamed R. Hassan, "**Neuro-Fuzzy Modeling of Hexavalent Chromium Removal from Aqueous Solution Using Modified Low-Cost Sorbent**, " Submitted in Journal of Chemical Engineering Research and Design.