

Hesham H. Aly

Professional Experience & Skills

Academic and Engineering Experience

- 17 years' experience in academic field, including lecturing, preparing exams, labs experiments, new modules.
- 3 years' experience in Academic project management (ERASMUS projects)
- 1-year experience in distance learning.
- 15 years' experience in electrical and electronic circuit design and systems including RF/analogue & digital synthesis and simulation.
- 10 years' experience in hardware circuit design products through the whole development life cycle from specification and prototype to testing/validation and production.
- 7 years' experience in multi-layer printed circuit board (PCB) design & testing - schematic & layout using OrCAD, P-Spice, and Multi-Sim.
- 13 years' experience in the academic career as a lecturer in electrical/electronic & computer engineering in both undergraduate and postgraduate degrees.
- Excellent experience in micro electro-mechanical system (MEMS) sensor modeling & design using Matlab and COMSOL (Finite element method-based structure analysis package).
- Excellent experience in programming ARM and Atmel micro-controller embedded systems through Arduino IDE, raspberry pi, test environments and tools such as MATLAB, Simulink, and familiar with C, and C++.
- Excellent experience in a variety of lab electrical/electronic testing and measuring instruments, such as oscilloscopes, function generators, spectrum analyzers, analogue and digital multi-meters, electronic load units, hot air gun, etc.
- Excellent experience in testing, troubleshooting and repairing & reworking electronic PCB assemblies including de-soldering and re-soldering of surface mount and through-hole components.
- Excellent experience in analogue and digital signal processing systems sparse sampling, including mathematical design and modeling of filters and A/D converters, etc.
- Good experience in the design and implementation of high-speed digital processing solutions and systems in FPGA including system-on-chip (SOC), VHDL, embedded processors, and high speed interfaces, such as IoT, and Ethernet.
- Good experience in Analogue/Digital VLSI layout circuit design using Microwind
- Good experience in operating and maintaining a variety of biomedical devices including ultrasonic and x-ray dental devices.

Software Skills

Matlab, Simulink, Multi-Sim, COMSOL, CCS, P-Spice, ORCAD, QUCS, ADS, Arduino IDE, Python, LabView C, Microsoft Office, PSOC, FPAA, C and C++

Personal Skills

- Hardworking, committed, with ability to work to deadlines and under pressure
- Excellent troubleshooting and problem-solving skills using a variety of methodologies.
- Effective member in a teamwork as well as excellent ability of undertaking individual duties.
- Motivated, enthusiastic, flexible, and enjoy new challenges.
- Excellent experience in teaching for undergraduate and graduate engineering students.

Work Experience

2012-2018

Electronic Engineering Lecturer

Staffordshire University
College Rd, Stoke-on-Trent ST4 2DE

Main job role: Teaching a variety of electronic and computing modules to undergraduate and postgraduate awards (such as: Digital Signal Processing, RF/Analogue and Mixed circuit design, Communication Principles, Machine to machine learning, Smart cities and building technology, Optical fibre communication systems. Supervising a number of undergraduate and master projects. Assessment and preparation of teaching materials, such as lectures, tutorials, labs, exams, assignments, etc. Invigilation.

2015-2018

Academic Project Organizer

Staffordshire University
College Rd, Stoke-on-Trent ST4 2DE

Main job role: Organizing and managing a number of European projects, such as Erasmus (European Region Action Scheme for the Mobility of University Students). Creating modules materials, such as lecture handouts, tutorials, and prepare hardware tasks and projects. Establishing effective communication schemes and student registration procedures. Evaluation of exchanged students' modules and curriculum.

2002-2012

Electronics & Communications Engineering Lecturer

Academy for Science & Technology & Maritime Transport
Sheraton, Cairo, Egypt

Main job role: Teaching a number of electronics and communications engineering modules to undergraduate. Supervising a number of final year projects. Preparing teaching material, such as lectures, tutorials, and labs, and curriculum development. Organize and manage student's enrolment and registration processes.

2001-2002

Hardware & Software Maintenance Engineer

Systel Telecom (Motorola)
Alexandria branch, Giza Governorate, Cairo, Egypt

Main job role: Modification and rework of Motorola Mobile handsets, including Level 1 and Level 2 maintenance, soldering of microscopic surface mount components, and testing and validation of hardware/software operation.

1998-2001

Biomedical Engineer

Arab consultant Company
El-Eqbal street, Luran, Alexandria, Egypt

Main job role: maintenance ultrasonic equipment and X-Rays dental devices. Responsible for more than 100 clients form Alexandria and West Delta area in Egypt. Hardware/software troubleshooting, maintenance and regular check with installation

Papers

Gaber, Hesham H., Hamed El-Semary, and Hazem H. Ali. "Hexagonal microcantilever based IR imaging sensor." 2008, Engineering Research Journal, Helwan University, 2008. [Published].

Gaber, Hesham H., Hamed El-Semary, and Hazem H. Ali. "Hexagonal shaped microcantilever based IR imaging sensor." 2009 International Conference on Microelectronics-ICM. IEEE, 2009.

Hesham H. Aly, Abdel Hamid Soliman, M. Mansour, "Towards a Fully Automated Monitoring System for Manhole Cover," IEEE First Int. Conf. Smart Cities, 2015. [Published]

Hesham H. Aly, Abdel Hamid Soliman, M. Mansour, "Analogue to Information Converter design using analogue Chua circuit for IoT devices", The second International Conference on Internet of Things, Data and Cloud Computing (ICC 2017) [Published]

Karem, Karem, Ahmad Issa, Abdel-Hamid SOLIMAN, and Hesham H. Aly. "Inline Water Quality Monitoring System (IWQMS)." (2017).[Published]

Hesham H. Aly, Abdel Hamid Soliman, M. Mansour, "Two low power analogue chaotic oscillators for Analogue to Information Converter (AIC)", IMDPI, Sensors Journal, 2019.[Under review]

Qualifications

1998	BSc. Electronics and Communication Engineering. Academy for Science & Technology & Maritime Transport, Alexandria, Egypt
2009	MSc. Electronics Engineering. Academy for Science & Technology & Maritime Transport, Cairo, Egypt
2013	Post-Graduate Certificate in Research Methods (PgCRM). Staffordshire University, UK
2019	PhD Electrical & Electronic Engineering. Staffordshire University, UK.

Training

1999	One Week Training for Ultrasonic Biomedical equipment. Pie Medical- Holland
2000	One Week Training for new Pie Medical ultrasonic biomedical equipment. Pie Medical -Holland
2010	4 days training for COMSOL software at Al-Nady Company in Cairo
2013	Attend COMSOL 1 day training for COMSOL - UK
2015	Introduction to the Internet of Things and Embedded Systems (Coursera Course Certificates)
2016	The Raspberry Pi Platform and Python Programming for the Raspberry Pi (Coursera Course Certificates)

Contact

Address	30 Sidi Gaber St.- Alexandria- Egypt
Mobile	+2 010 66 80 26 08
Email	Hesham_mems@yahoo.com

