

## Mahmoud Ali Abdelnaby Mousa

Assistant Professor,  
Department of Computers and Systems,  
Faculty of Engineering,  
Zagazig University, Zagazig, Sharkia, Egypt.

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## Curriculum Vitae

### Personal information:-

Family name : Mousa  
Name : Mahmoud  
Date of Birth/ Place : 01/09/1987-Sharkya, Egypt  
Egypt Telephone : +201143138969  
Nationality : Egyptian

### Qualifications:

- **July 2018:** PhD. in Computer Science from Faculty of Science and Engineering, University of Liverpool, UK.  
PhD. Thesis Title: "*Optimisation in Multi-mode Systems*".
- **October 2013:** Master of Engineering Science (M.Sc.) from Department of Computers and Systems, Faculty of Engineering, Zagazig University, Egypt.  
Master Thesis title: "*Arabic Optical Text Recognition (AOTR) For Cursive Writing*". GPA: 3.7
- **May 2009:** Bachelor of Electrical Engineering (Computers and Systems) from Faculty of Engineering, Zagazig University, Egypt.  
**Overall grade:** Very Good with Honour Degree with cumulative grade (82.33%).  
**Graduation Project:** "*Hospital Automation*".  
**Project Grade:** Excellent.

## Teaching Experience:-

### - Assistant Professor: Sept. 2018 - Present

Computers and Systems Department, Faculty of Engineering, Zagazig University, Egypt.

**Courses:** Automata Theory, Applied Programming, Artificial Intelligence, Machine Learning, Digital Logic Design, Automatic Control Systems, Introduction to Computer and Programming, Graduation Projects Supervision.

### - Assistant Professor (part time): Sept. 2019 – Present

Electronics and Communications Department, Faculty of Engineering, Modern Science and Arts (MSA) University, Egypt.

**Courses:** Graduation Projects Supervision.

### - Assistant Professor (part time): Sept. 2019 – Jan. 2020

Faculty of Computer Science, Modern Science and Arts (MSA) University, Egypt.

**Courses:** Compiler Design.

### - Demonstrator and PhD. Researcher: Feb. 2015 – July 2018

Computer Science Department, Faculty of Science and Engineering, University of Liverpool, Liverpool, UK.

**Role:** Giving tutorials and labs on the following courses.

**Under graduate courses:** Computer Systems Operating Systems, Foundation of Computer science, Software Engineering, Decision, Computation and Languages, Artificial Intelligence.

**Post graduate courses:** Safety and Dependability, Advanced Algorithms, Reasoning about Actions, Applied Algorithms, Research Methods.

### - Teaching Assistant and M.Sc. Researcher: Nov. 2009 - Jan. 2015

Computers and Systems Department, Faculty of Engineering, Zagazig University, Egypt.

**Role:** Giving tutorials and labs on the following courses.

**Courses:** Computer Architecture, Microprocessors, Algorithms and data structures, Digital Logic design, Operating Systems, Computer Programming (C, C++, Visual Basic, Java and Matlab), Analog Control Systems, Digital Control Systems, Process Control.

## Research Projects:-

I am a member of a team responsible for designing and manufacturing a two-unit cubic satellite. This project is a joint work between Faculty of Engineering-Zagazig University and the Egyptian Space Agency. I am acting as the head of the group responsible for designing and programming the Attitude Determination and Control System (ADCS).

**Professional Expertise:**

I contributed with a team of Egyptian and American experts to prepare the bylaws and the courses descriptions for two postgraduate diplomas specialized for STEM education for both teachers and Leaders.

I am currently participating in other workshops to prepare and develop the bylaws and courses descriptions for an undergraduate program designed for STEM education.

**Computer Skills and Experience:-**

- Programming with C, C++ , JAVA and Matlab.
- Programming using Labview plus (statechart and vision modules toolkits).
- Database Design and Implementation using ERD and SQL.
- Have a good view in computer networks design and analysis.
- Excellent in understanding and solving hardware and software problems of computer.
- Ability to work in a team and under pressure.

**Volunteer Experience:-**

- Working member of the implementation team of the Quality Assurance System of the faculty.
- Instructor in the summer training provided by our department for students.

**Research Area of Interest:**

- 1- Research related to image processing, machine and computer vision.
- 2- Research related mainly to Artificial Intelligence and Internet of Things.
- 3- Research related to optimization and approximation algorithms.
- 4- Research related to blockchain technology and cloud computing.

**Prizes:**

1. **The winner (1<sup>st</sup> place)** in National Instruments NI week 2009 for the graduation project in Texas, USA.

<https://decibel.ni.com/content/docs/DOC-5848>

The competition was done in the Arabia region of national instruments company. This region consisted of 20 counties: Afghanistan, Algeria, Bahrain, Cyprus, Egypt, Iraq, Jordan, Kuwait, Lebanon, Libya, Mauritania, Morocco, Oman, Pakistan, Qatar, Saudi Arabia, Tunisia, Turkey, United Arab Emirates and Yemen. A poster for our project was published in national instruments (NI) week 2009 conference in Texas, USA.

2. **The winner ( 3<sup>rd</sup> place out of 82)** in Made In Egypt (MIE) competition for the graduation project in 2009. MIE competition is the biggest one in Egypt for the engineering graduation projects. Judges in this competition are not only of academic professors but also industrial leaders in Egypt.
3. Distinguished Graduate Award and Certificate of Appreciation from Zagazig University-Egypt. (2009).

#### Publications:

1. Mohamed Soliman, Mousa, Mahmoud AA., Mohamed Anwar and Ahmed Daif, "**Hospital automation**", National Instruments (NI) Week conference, USA, 2009. <https://decibel.ni.com/content/docs/DOC-5848>
2. Mousa, Mahmoud AA., Mohammed S. Sayed, Mahmoud I. Abdalla, "**Arabic Character Segmentation Using Projection-Based Approach with Profile's Amplitude Filter**", IEEE *International Conference on Information and Communication Technology (ICOICT)*, Indonesia, pp.122-126, 2013.
3. Mousa, Mahmoud AA., "**Arabic Optical Text Recognition (AOTR) For Cursive Writing**" (Master dissertation Zagazig University), 2013
4. Mousa, Mahmoud AA., Mohammed S. Sayed, Mahmoud I. Abdalla, "**An Efficient Algorithm for Arabic Optical Font Recognition Using Scale Invariant Detector**", *International Journal on Document Analysis and Recognition (IJDAR)*, 3(18), September 2015, pp 263-270 .
5. Mousa, Mahmoud AA., Sven Schewe, and Dominik Wojtczak. "**Optimal control for simple linear hybrid systems.**" *Temporal Representation and Reasoning (TIME)*, 2016 23rd International Symposium on. IEEE, 2016.
6. Mousa, Mahmoud AA., Sven Schewe, and Dominik Wojtczak. "**Optimal control for multi-mode systems with discrete costs.**" *International Conference on Formal Modeling and Analysis of Timed Systems*. Springer, Cham, 2017.
7. Mousa, Mahmoud AA., "**Optimisation in multi-mode systems**" (Doctoral dissertation, University of Liverpool), 2018.

8. Mousa, Mahmoud AA., "**Image compression based on a variable size multiple blocks SVD and genetic algorithm**". Journal of Visual Communication and Image Representation. (*On review*)
9. Mousa, Mahmoud AA., "**AI-based opinion extraction algorithm applied to agents' quality of service questionnaires**". Engineering Applications of Artificial Intelligence. (*On review*)