# Mahmoud Abdelaal Hassanin Ismail

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|---|---|---|
| Sex | : | Male |
| Date of birth | : | 27 / 09 /1988 |
| Nationality | : | Egyptian |

## CAREER OBJECTIVE

A responsible position in Academic Teaching, Scientific Research and Industrial R&D fields where my experience, accomplishments, communication and leadership skills will allow me the opportunity for growth.

## WORK EXPERIENCE

**Sept. 2019 – Present**

### Lecturer

Part-time Lecturer at Credit Hours Program "Electrical and Energy Engineering, EEE", Electrical Power and Machines Engineering Department, Faculty of Engineering, Cairo University, Egypt.

➢ Teaching some courses in fields of Automation and Control Engineering

➢ Organize course materials (lectures, assignments, lab experiments, mid-term and final exams, course web page)

**Sept. 2019 – Present**

### Lecturer

Part-time Lecturer at Mechatronics Engineering Section, Mechanical Engineering Department, Egyptian Academy for Engineering and Advanced Technology "Affiliated to Ministry of Military Production", Egypt.

➢ Teaching some courses in fields of Robotics and Mechatronics Engineering

➢ Organize course materials (lectures, assignments, lab experiments, mid-term and final exams)

➢ Supervising students in graduation projects

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| **March 2015 – Present** | **Research Engineer** |

Full-time Research Engineer at Intelligent Systems Group, Computers and Systems Department, Electronics Research Institute, Ministry of Scientific Research, Egypt.

In Fields of Robotics, Artificial Intelligence, Automation and Mechatronics Systems.

➢ Applying and developing Artificial Intelligent techniques in many applications such as Robotics and Vision Systems

➢ Read and analyze technical articles related to research topics

➢ Helping in establishing and assembling new Robotics Systems

➢ Applying and developing new control and AI techniques in Robotics field

➢ Study published algorithms related to our research topics

➢ Preparing proposals for new labs and new research topics to be launched at the new ERI building

➢ Collaborate with private sector companies to develop and fund new devices for the new ERI building

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| **Sept. 2014 – Aug. 2019** | **Assistant Lecturer and Control Engineering Labs Supervisor** |

Credit Hours Program "Electrical and Energy Engineering, EEE", Electrical Power and Machines Engineering Department, Faculty of Engineering, Cairo University, Egypt.

➢ Leading a group of M.Sc. research students in Robotics field

➢ Assist in teaching some courses such as Automatic Control systems, Microcontrollers and its applications, Process control and Robotics

➢ Assist instructor to organize course materials (assignments, mid-term and final exams, course web page)

➢ Preparing and teaching some lab experiments in fields of Robotics, Servo Systems, Microcontrollers and Control Systems

➢ Preparing and teaching Annual Summer Training in fields of Robotics, Automation Systems (PLC, DCS, SCADA), Control Systems, PV System and Microcontrollers

➢ Collaborate with private sector companies to improve and develop the labs

➢ Helping in establishing and assembling some systems and devices

➢ Helping students in graduation projects and experiments points

➢ Preventive maintenance and trouble-shooting solving on my own responsibility

| Sept. 2012 – July 2014 | **M.Sc. Research Student and Control Engineering Labs Supervisor** |
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Automatic control Group, Electrical Power and Machines Engineering Department, Faculty of Engineering, Cairo University, Egypt.

➢ Preparing and teaching Annual Summer Training in fields of Robotics, Automation Systems (PLC, DCS, SCADA), Control Systems, PV System and Microcontrollers

➢ Helping in establishing and assembling some systems such as FESTO system and Mitsubishi Robot

➢ Perform different activities under my supervisor constructions

➢ Helping students in graduation projects and experiment points

➢ Preventive maintenance and trouble-shooting solving on my own responsibility

## EDUCATION AND TRAINING

| October 2015 – July 2019 | **Doctoral Degree (Doctor of Philosophy, PhD) in Electrical Power and Machines Engineering "Automatic control Group"** |
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Automatic control Group, Electrical Power and Machines Engineering Department, Faculty of Engineering, Cairo University, Egypt.

In Fields of Robotics, Artificial Intelligence, Robot Vision Systems and Control of Robots.

Thesis Title: "Deep Learning and Optimization Techniques Applied to Robot Vision System for Detecting and Grasping Known Objects".

Supervisors:

➢ Prof. Dr. Ahmed Bahgat Gamal Bahgat

Faculty of Engineering, Cairo University, Egypt.

➢ Prof. Dr. Hassan Mohamed Rashad Emara

Faculty of Engineering, Cairo University, Egypt.

➢ Prof. Dr. Ayman El-Dessouki Ibrahim El-Dessouki

Electronics Research Institute, Ministry of Scientific Research, Egypt.

➢ Prof. Dr. Ahmed Mohamed Fahim Saqr          (Internal Examiner)

Faculty of Engineering, Cairo University, Egypt.

➢ Prof. Dr. (General) Magdy Osman Tantawy    (External Examiner)

Egyptian Space Agency, Egypt.

**October 2011 – July 2014**     **Master of Science in Electrical Power and Machines Engineering "Automatic Control Group"**

Automatic control Group, Electrical Power and Machines Engineering Department, Faculty of Engineering, Cairo University, Egypt.

Thesis Title: "Experimental Study on the Operation and Control of a 6 Axes (DOF) Robot in Assembly Line".

Supervisors:

➢     Prof. Dr. Ahmed Bahgat Gamal Bahgat

Faculty of Engineering, Cairo University, Egypt.

➢     Prof. Dr. Hassan Mohamed Rashad Emara

Faculty of Engineering, Cairo University, Egypt.

➢     Prof. Dr. Mohamed Mohamed Fahim Saqr     (Internal Examiner)

Faculty of Engineering, Cairo University, Egypt.

➢     Prof. Dr. (General) Magdy Osman Tantawy     (External Examiner)

Egyptian Space Agency, Egypt.

**2005 – 2010**     **Bachelor of Science in Mechatronics Engineering from Mechanical Engineering Department, Grade "Good"**

Mechatronics Engineering Section, Mechanical Engineering Department, Faculty of Engineering, Helwan University, Egypt.

Collaborated with a 7 member-team to research, organize, design and present the graduation project using the characteristics of shape memory alloys, SMAs to generate electricity from the water heated by the sun heat, with Grade "Excellent".

**Project Management Courses:**

➢  PMP / CAPM Exam Preparation course, 2010

➢  Project(s) Management, 2010

➢  Primavera P3, level1, 2010

**DAAD Kairo Akademie (DKA) Modules:**

➢  "Design Your Effective Training Course Step By Step" on 25th December 2018 By Ms. Heba Afifi.

➢  "Leading Teams" of the further domain "Communication" on 27th November 2018 By Ms. Sonja Drewes.

➢  "Effective Cooperation in Teams" of the further domain "Soft Skills for Academics" on 26 September 2017 By Ms. Sonja Drewes.

➢  "Funding Resources for Research Projects" of the further domain "Institutional Capacity Building" on 14th May 2017 By Eng. Alaa Shahin.

➤ "Self-Marketing" of the further domain "Programme Preparation" on 03 June 2015 By Dr. Heba Salama.

➤ "Scientific Thinking and Argumentation Skills for Problem Solving" of the further domain "Academic Skills" on 24 May 2015 By Mr. Mohamed Taha.

### Automotive Courses:

➤ Auto Mechanics, SALESIAN Institute "DON BOSCO", (2.5 months), 2013

➤ Cars electricity, adjustment and maintenance of electric circuits, 2009

## PERSONAL SKILLS ■

### Mother Tongue:

Arabic

### Other Languages:

| UNDERSTANDING | | SPEAKING | | WRITING |
|---|---|---|---|---|
| Listening | Reading | Spoken Interaction | Spoken Production | |
| English | | | | |
| C2 | C2 | C1 | C1 | C2 |
| French | | | | |
| B2 | B2 | B1 | B1 | B1 |
| German | | | | |
| A2 | A2 | A2 | A2 | A2 |

Levels: A1/2: Basic user - B1/2: Independent user - C1/2 Proficient user
Common European Framework of Reference for Languages

### Engineering / Technical Skills:

➤ PLC / SCADA / DCS

➤ Embedded System (Microcontrollers)

➤ Industrial Communication Network

### Programming Skills:

➤ Proficient user of MELFA BASIC V, MATLAB, C, C++, LABVIEW, AutoCAD 2D&3D and Microsoft Office™ tools.

➤ Good command of Python, Inventor, C# and Primavera P3.

### Communication Skills:

➤ Good communication skills gained through my experience as a teaching assistant and scientific researcher

➤ Creative, self-motivation, reliable and dynamic

➤ Ability to work individually and as a co-operative team member

### Other Skills:

➤ Reading – Playing Chess – Playing Football

## ADDITIONAL INFORMATION ────────────────────────────────── ■

**Areas of Research Interests:**

- ➢ Robotics (Control and Programming)
- ➢ Artificial Intelligence (Deep Learning, Machine Learning and Optimization Techniques)
- ➢ Robot Vision, 2D and 3DVision Systems and Machine Vision
- ➢ Automatic Control and Intelligent Control Systems
- ➢ Industrial Automation and Manufacturing Systems

**Publications:**

- ➢ Mahmoud Abdelaal, Ramy M. A. Farag, Mohamed S. Saad, Ahmed Bahgat, Hassan M. Emara and Ayman El-Dessouki **"A Robot Vision System for 6-DOF Pose Estimation based on Stereo Vision and End-To-End Deep Learning"** *Robotics and Autonomous Systems Journal*, submitted at 9 December 2019 and under review since 9 March 2020

- ➢ Mahmoud Abdelaal **"A Study of Robot Control Programing for an Industrial Robotic Arm"** *IEEE 6th International Conference on ADVANCED CONTROL CIRCUITS AND SYSTEMS (IEEE ACCS'019)* and *IEEE 5th International Conference on NEW PARADIGMS IN ELECTRONICS & INFORMATION TECHNOLOGY (IEEE PEIT'019)*, November 2019, Hurghada, Egypt

- ➢ Mahmoud Abdelaal, Ahmed Bahgat, Hassan M. Emara, Ayman El-Dessouki **"Real-Time External Control Coupled with Vision-Based Control for an Industrial Robotic Arm to Pick and Place Moving Object on a Conveyor Belt"** *International Journal of Mechanical & Mechatronics Engineering IJMME-IJENS*, February 2019, Vol:19 No:01

- ➢ Mahmoud Abdelaal **"Robot Vision Evolution: A way to A Modern Intelligent Industrial Robotics"** *IEEE 5th International Conference on ADVANCED CONTROL CIRCUITS AND SYSTEMS (IEEE ACCS'017)* and *IEEE 4th International Conference on NEW PARADIGMS IN ELECTRONICS & INFORMATION TECHNOLOGY (IEEE PEIT'017)*, November 2017, Alexandria, Egypt

- ➢ Mohammed E. El-Telbany, Sahar A. Mokhtar and Mahmoud Abdelaal **"Reinforcement Learning for Robotics and Optimal Control"** *4th International Conference on ADVANCED CONTROL CIRCUITS AND SYSTEMS (ACCS'015)* and *3rd International Conference on NEW PARADIGMS IN ELECTRONICS & INFORMATION TECHNOLOGY (PEIT'015)*, November 2015, Luxor, Egypt

**Services:**

- ➢ Reviewer of *IEEE Access* Journal

> ➤ Reviewer of *PaperCept* Conferences

**References:**

> ➤ **Prof. Dr. Ahmed Bahgat Gamal Bahgat**

- Professor of Automatic Control, Automatic control Group, Electrical Power and Machines Department, Faculty of Engineering, Cairo University, Egypt

- Former Vice Dean for Graduate Studies and Research, Faculty of Engineering, Cairo University, Egypt

- Consultant to the Minister of Higher Education and Scientific Research, Cairo, Egypt

*Email address:* ahmed.bahgat@ieee.org; agbahgat@hotmail.com

> ➤ **Prof. Dr. Ayman El-Dessouki Ibrahim El-Dessouki**

- Professor of Artificial Intelligence, Intelligent Systems Group, Computers and Systems Department, Electronics Research Institute, Ministry of Scientific Research, Egypt

- Former President of National Authority for Remote Sensing & Space Sciences, Cairo, Egypt

- Former President of Electronics Research Institute, Cairo, Egypt

*Email address:* ayman@eri.sci.eg; aeldessouki2011@gmail.com

> ➤ **Prof. Dr. Hassan Mohamed Rashad Emara**

- Professor of Automatic Control, Automatic control Group, Electrical Power and Machines Department, Faculty of Engineering, Cairo University, Egypt

- President of Energy Research Center, Faculty of Engineering, Cairo University, Egypt

- General Manager of  CONTECH company, Egypt

- Consultant to some private companies, Egypt

*Email address:* hmrashad@ieee.org; hmrashad@gmail.com

> ➤ **Prof. Dr. Magdy Osman Tantawy**

- Member of the Board of Directors of the Egyptian Space Agency, Egypt

- Former Professor of Automatic Control Engineering, Technical Military College, Ministry of Defense, Egypt

- Professor of Automatic Control Engineering, Communication Engineering Department, Modern Academy for Technology and Engineering, Egypt

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