

Amr Khamis Mahmoud

Research and Development Engineer

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SUMMARY

My core focuses of interest currently include: Research & Development, Embedded Systems, Mechatronics Systems, Renewable Energy, Robotics, Remotely Operated Vehicles, Satellite Tracking Systems, Wireless Sensors Networks, Electric Cars, Autonomous Cars, Machine Learning Applications, CNC Machines, 3D Printing Technologies, Reverse Engineering and Manufacturing.

EXPERIENCE

Head of Department
Arab Academy
2016 – present

Head of Research and Development Department at Industry Service Complex (ISC) one of the Arab Academy for Science, Technology and Maritime Transport (AASTMT) centers.

Head of Unit
Arab Academy
2015 – 2016

Head of Research and Development Unit at Industry Service Complex (ISC) one of the Arab Academy for Science, Technology and Maritime Transport (AASTMT) centers.

R&D Engineer
Arab Academy
2006 - 2015

Research and Development Engineer at Industry Service Complex (ISC) one of the Arab Academy for Science, Technology and Maritime Transport (AASTMT) centers.

EDUCATION

PhD Degree
2020 - Present

PhD Candidate in Electronics and Communication Engineering – College of Engineering and Technology - Arab Academy for Science, Technology and Maritime Transport (AASTMT). Alexandria – Egypt.

Master's degree
2007 – 2012

Master Degree in Electronics and Communication Engineering – College of Engineering and Technology - Arab Academy for Science, Technology and Maritime Transport (AASTMT). Alexandria – Egypt. Grade: Excellent with Degree of Honor (GPA: 3.67).

Thesis Topic: Hexagonal Two-Tier Data Dissemination Model for Large Scale Wireless Sensors Networks

Bachelor's degree
2001 – 2006

Bachelor Degree in Electronics and Communication Engineering – Faculty of Engineering - Alexandria University – Egypt. Grade: Very Good with Degree of Honor (Grade: 83.63%).

SKILLS

Altium PCB Designer



C Programming



Reverse Engineering



Microprocessors



Matlab



FPGA



PROJECTS

Jan 2023	Reverse engineered commercial spart parts
Sept 2022	River transportation simulator for training purposes
June 2022	Mobile Mechanical Ventilator
March 2022	Campus Smart Recycling System to turn Food Organic Wastes and Recyclables into Economic Value Products
Feb 2022	Remotely Controlled Water Rescue Robot
Feb 2021	Autonomous Mobile Robot for Smart Warehouses
July 2020	Beach Wheelchair for disabled
May 2020	Design of Mechanical Ventilator
April 2020	Design and Manufacturing of COVID-19 Disinfection Chamber for Humans
March 2020	Cans Crushing Machine
Jan 2020	Design and Manufacturing of Mechatronics Educational and Training Kit
Nov 2019	Image Recognition System for Containers Numbers (Arkas Egypt Co.)
Sep 2019	Design and Manufacturing of Solar Air Conditioner
Sep 2019	Design and Manufacturing a of Internal Combustion Engine Model
Aug 2019	3D Printer for Drugs Tablets
Aug 2019	Construction of Central Air Conditioning System Demonstration Model
Aug 2019	Energy Saving Model for HVAC Applications
Aug 2019	Model Implementation of Beach Wheel Chair for Disabled
Jul 2019	Design & Manufacturing of Commercial AC Unit for Humid Climate
Jul 2019	Design and Manufacturing of ½ Ton Evaporator
Jun 2019	Design and Manufacturing of Helical Heat Exchanger
Jun 2019	Design and Manufacturing of Multi-Components Refrigeration System
May 2019	Azolla Plant Sustainable System

Jan 2019	Model Implementation for New Oil Fire Fighting System
Aug 2018	Retrofitting of Conventional Lathe Machine
Jul 2018	CNC Planting Machine for Vegetables
Aug 2017	Commercial Wood Sanding Machine
May 2017	PLA and ABS 3D Printer
Sep 2016	Organic Wastes Recycling Machine into Organic Fertilizer
Aug 2016	Organic Wastes Recycling Machine into Fish Feed
Jun 2016	CNC Router Machine
Apr 2016	Remotely Operated Vehicle
Feb 2015	Satellite Tracking System
Jan 2015	Atmospheric Water Generator
Jan 2015	ECO House - Sinai Governate
Mar 2014	Humanoid Robot
Sep 2013	Traffic Control System with Image Processing
Feb 2013	Infant Baby Incubator
Feb 2013	Sweeper Car
Jul 2011	Stairs Climbing Four Wheeled Chair
Jun 2010	Refrigerator Truck Data Logger System
Aug 2009	Conveyer System (Sakr Factory for Food Industry)
May 2009	Tooth Paste Packing Machine
Apr 2008	Packing Machine (Sakr Factory for Food Industry)
Feb 2007	Tubes Bending Machine
Dec 2006	Electric Car
Sep 2006	Musical Fountain

TEACHING

Mechatronics Systems (ME592) – Mechanics Department – College of Engineering – AASTMT

Mechatronics (ME591) – Mechanics Department – College of Engineering – AASTMT

Embedded Systems (EC531) – Electronics Department – College of Engineering – AASTMT

Project Design, Implementation and Evaluation (Unit 3) – Course Assessor - Technical and Vocational Institute – Pearson BTECH – AASTMT

Research Project (Unit 34) – Course Assessor - Technical and Vocational Institute – Pearson BTECH – AASTMT

Managing a Professional Engineering Project (Unit 4) – Course Assessor - Technical and Vocational Institute – Pearson BTECH – AASTMT

Industrial Robot Technology (Unit 32) – Course Internal Verifier - Technical and Vocational Institute – Pearson BTECH – AASTMT

Mechatronic Systems (Unit 57) – Course Internal Verifier - Technical and Vocational Institute – Pearson BTECH – AASTMT

Microprocessor Systems (Unit 58) – Course Internal Verifier - Technical and Vocational Institute – Pearson BTECH – AASTMT

Mechatronics (Unit 6) – Course Internal Verifier - Technical and Vocational Institute – Pearson BTECH – AASTMT

Automation, Robotics and Programmable Logic Controllers (Unit 15) – Course Internal Verifier - Technical and Vocational Institute – Pearson BTECH – AASTMT

Commercial Programming Software (Unit 40) – Course Internal Verifier - Technical and Vocational Institute – Pearson BTECH – AASTMT

Industrial Systems (Unit 45) – Course Internal Verifier - Technical and Vocational Institute – Pearson BTECH – AASTMT

Embedded Systems (Unit 46) – Course Internal Verifier - Technical and Vocational Institute – Pearson BTECH – AASTMT

PUBLICATIONS

2012

Hexagonal Two-Tier Data Dissemination Model for Large Scale Wireless Sensor Network, 2012, JEC-ECC'12.

2012

Achieving Scalability in Wireless Sensor Network Using Hexagonal Multi-Layer Grid Data Dissemination Approach, Journal of applied science 12(19), 1982-1994, 2012.

2013

Low-Cost Atmospheric Water Generator, AEAS 2013

GRANTS	
Project Manger	Design and Implementation of an Automatic Deblistering and Pharmaceutical Waste Recycling and Separation System – STDF Fund (Grant Value: 1.5M EGP)
Project Manger	Mobile Mechanical Ventilator – AASTMT Internal Fund (Grant Value: 350K EGP)
Project Manger	Campus Smart Recycling System to turn Food Organic Wastes and Recyclables into Economic Value Products – AASTMT Internal Fund (Grant Value: 350K EGP)
Project Principal Investigator (PI)	Atmospheric Water Generator – Academy of Scientific Research and Technology. (Grant Value: 650K EGP)
Project Principal Investigator (PI)	Alternative Power Generation System Using Agricultural Wastes – Academy of Scientific Research and Technology. (Grant Value: 650K EGP)
R&D Engineer	Remotely Operated Vehicle (ROV) – Academy of Scientific Research and Technology. (Grant Value: 100K EGP)
R&D Engineer	Robot for bomb disassembly – Academy of Scientific Research and Technology. (Grant Value: 1.0M EGP)
R&D Engineer	Energy sustainable Houses (ECO House) – Academy of Scientific Research and Technology. (Grant Value: 3M EGP)
R&D Engineer	Broadband Satellite Communication Network Development (ENPI/2014/342-443) – Research, Development and Innovation Programme Funded by the European Union (Grant Value: 600K Euro)
AWARDS	
Aug 2021	2nd Place MATE ROV International Competition – INVICTUS Team – Tennessee USA –Issued by MATE II
Jun 2019	2nd Place MATE ROV International Competition – INVICTUS Team – Tennessee USA –Issued by MATE II
Apr 2019	1st Place Arab Academy ROV Competition – INVICTUS team – Issued by Egypt ROV
Jun 2017	4th Place MATE ROV International Competition – INVICTUS Team – California USA– Issued by MATE II
Apr 2017	1st Place Arab Academy ROV Competition – INVICTUS team – Issued by Egypt ROV
May 2016	8th Place Soft Robotics Competition – Livorno ITALY – Issued by European Union
Nov 2014	6th Place WRO Open Category – Sochi Russia – Issued by WRO International
Sep 2014	3rd Place WRO Open Category – Issued by WRO EGYPT
Mar 2013	Best Project - FLL Competition – Issued by FLL
Aug 2006	Best Graduation Project – Egyptian Engineering Day (EED) Issued by Ministry of Higher Education and Ministry of Communications.

REFERENCES

Available upon request

Prof. Dr. Alaa Abdel Bary

Vice President for Research and Postgraduates Studies - AASTMT

Prof. Dr. Amr Ali Hassan

Dean of College of Engineering – AASTMT (Main Campus)

Dr. Mohamed Elghamry

Dean of Applied Research – AASTMT

Prof. Khaled Said Elkilany

Dean of Industry Service Complex - AASTMT

Prof. Dr. Yasser Gaber

Dean of Scientific Research and Innovation – AASTMT

Prof. Dr. Mohamed Fahmy

Dean of College of Engineering – AASTMT (South Valley Branch)

Prof Dr. Ahmed Farouk Alsafty

Dean of College of Engineering – AASTMT (Alalamin Branch)

Prof. Dr. Ossama Ismail

Dean of Regional Informatics Center – AASTMT

Prof. Dr. Mohamed Essam Khedr

Dean of Admission and Registration – AASTMT

Prof. Dr. Mohamed Abo Elazm

Dean of Students Affairs – AASTMT

Prof. Dr. Sayed Saber

Head of Mechanics Department – College of Engineering – AASTMT

Prof. Dr. Shreen Youssef

Head of Computer Department – College of Engineering – AASTMT

Prof. Dr. Soheir Rezika

Lecturer at Mechanics Department – College of Engineering – AASTMT

Dr. Mohamed Elhabrouk

Lecturer – Faculty of Engineering – Alexandria University