MOSTAFA OSAMA AHMED METWALLY OTHMAN

PERSONAL INFORMATION

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EDUCATION

2020-2022

Master's Degree in Robotics and Computer Vision

Innopolis University, Kazan (Russia).

2015 -2020

Bachelor's degree Faculty of Engineering, Mechatronics Department

Nile University, 6 October city (Egypt).
Excellent in final graduation Project and CGPA:3.71/4 with High Honors.

Publication

Aug 2021

K. Almaghout, R. A. Boby, M. Othman, A. Shaarawy, and A. Klimchik, "Robotic Pick and Assembly Using Deep Learning and Hybrid Vision/Force Control," in 2021 International Conference "Nonlinearity, Information and Robotics" (NIR), Aug. 2021, pp. 1–6. doi: 10.1109/NIR52917.2021.9666138.

COMPETITIONS AND COURSES

Dec 2020 – May 2022

Tele-operation and control of kuka iiwa Robotic arm using Haptic device and force feedback for resilience assembly of peg-in-hole task using shared autonomy

Master Graduation Project

Assembly of cylindrical object in a hole with tight clearance smaller than or equal the robot accuracy is a challenging task. Integrating and working on different fields and platforms from computer vision for detection, Implementing different methods to solve this problem from full autonomy, fully teleoperated, shared autonomy and learning by demonstrations. The peg-in-hole task serve as a great benchmark for any industrial application. The hardware used was kuka LBR iiwa with ROS and connecting with touch haptic device using C++ program, adding user interaction using VR. Conducting survey and design of experiments for different scenarios and case studies for this task is then presented as the result for the work.(Demo)

Dec 2019 – Aug 2020

DELL EMC Technologies Envision the Future competition

A competition for senior undergraduate students from universities in Africa and Mena region that compete for the best project in utilizing technology in Healthcare, Well-being, industrial or Education sectors. From 227 project along 14 countries.
We won the 5th place for our graduation project and nominated to participate in their annual international conference. The competition focused on the technical part along with the business side and management of the project overall, requiring reports with all details about our vision for the project implementation in real world and planning for its management.

Jan-Dec 2020

IOT and AI Egypt Challenge

We won the first place among all graduation projects in Egypt, we were qualified and participated in IEEE Global Conference on Artificial Intelligence and Internet of Things (GCAIOT) to present our work. During the competition, we went through intensive technical, business and innovation training

Oct 2019 – Jul 2020

Design and Implementation of a Tele-operated Virtual Reality Environment for controlling a 7-DOF Industrial Robotic Arm in hostile Environment

Bachelor Graduation Project

Designing and building a full system for controlling robotic arm with Virtual Reality. Implementing a new way to integrate the virtual reality With the Robotic Arm Controlling the arm motion with forward and inverse kinematics using ROS (Robotics Operating System) and trajectory planning. using unity as a software that integrates both virtual reality interactions and user interface and robot modelling and simulation with ROS. (Demo)

March – Sept 2019

Erasmus +KA2 VET-ENG project

Designing and modelling of FDM 3D-Printer using solidworks, manufacturing and assembly with all its Mechanical, Electrical and Electronics parts. Testing and developing for higher accuracy and performance, Integrating raspberry pi with Octoprint and connecting to cloud for full control and stream. The design was a hypercube with core xy Mechanism which allows a better performance.

Aug 2019

Google cloud platform study jams

I have attended and finished some courses regarding cloud platforms and their implementations in relation with IOT and google assistant with some tools like Docker and cloud services (my google badges).

Sept 2018

Walking Robots competition 2018

IEEE Zewail City

won the 3rd place, we worked on a full Solidworks motion simulation analysis for the robot doing the task of walking in sand and different environment and across a ramp and manufacturing it.

Aug 2018

Minesweepers competition 2018

Won No Pain No Gain award, took part with Tesla Team, designing a 4-wheel mobile robot that detects landmines and draw a map with its coordination in it.

July 2018

InnovEgypt program 2018

Technology Innovation and Entrepreneurship Centre

The program was 6 full days consists of 3 modules
1.Innovation and technology management.
2.Ideation (INTEL youth enterprise) improving the idea generation.
3.Entrepreneurship working on a full project to deliver all these outcomes.

June 2018

6TH Undergraduates Research Forum

Nile university

Won the 2nd place in linear algebra project for making a 3-DOF Robotic arm and connecting it with Matlab driving all theories and equations behind it.

Oct-Jan 2018

IOT Egypt Challenge

HTI RACING TEAM

Making an IOT system connected with a car to give us data about the car status and to provide appropriate data to the driver, with some sensors and embedded system.

July-Aug 2017

Walking Robots competition 2017

IEEE Zewail City

A mentor of 8 teams participating in the competition from HTI and we was partners with IEEE as Robotronics to teach the fresh student and to encourage them to compete. Robotronics won the 1st, 2nd and 4th places by students under our supervision.

Aug - Sep 2016

Robot Challenge 2016

Air Race competition

Made a quadcopter that could trace a line, move over it autonomously
Won the golden medal and qualified to the internationals.

Aug - Sep 2016

World Robot Olympiad 2016

Open category, Coach Assistant for two teams.

Working on a small boat that collects the wastes on the surface of water that could reduce the pollution and specially for oil and petrol disasters.

Oct 2015 - Jun2016

Remotely Operated Underwater Vehicle “ROV” 2016

Team leader of the arm team we made an isolated robotic arm 3 DOF working under water and making all the tasks.

Aug - Sept 2015

World Robot Olympiad 2015

Made a Robot that detect ice thickness, I was the Team Leader.
we won the bronze medal and Qualified to the internationals.

Feb 2015

professional Development Foundation

Maharaty scholarship

Coping with Change, Problem Solving and Decision Making
Presentation Skills, Communication Skills, Time Management

TRAININGS

June – July 2021

Internship Laboratory of Intelligent Robotics systems

Innopolis University

Teleoperation of a Cable-driven robot of size 10 by 7 meters via Touch Haptic device. The goal was to establish a communication between haptic device running on Visual studio using C++ and the cable driven robot interfacing PLC controllers for driving motors and sensors to the Pc running on Golang, Establishing a websocket communication to connect both systems and having a bilateral connection of sending and receiving. Lastly, controlling the velocity of the robot.(Demo)

DEC 2020

Winter school on Machine Learning in Robotics

Innopolis University

It is a four-day intensive course about the powerful combination of Robotics and Machine learning, the main topics was Robot Reinforcement Learning, Developmental Robotics, Evolutionary Robotics, Machine learning for Computer Vision and Deep Generative models.

August 2018

Research centres Bootcamp

Nile university Research centres (NISC, WINC)

Trained for 2 weeks on how to write a paper and was introduced to NISC and WINC research centres knowing more about FPGA and how they work as well as getting hands on experience with Intel EDISON board and developing IOT projects with it on Linux.

June-July 2017

ARAB AMERICAN VHECHILE (AAV)

JEEP FACTORY

Trainee for 2 months, we learned more about the automation and production lines of cars, all the stages that the car pass through in assembly lines.

August 2016

ARAB ORGANIZATION FOR INDUSTERIALIZATION (AOI)

ENGINE FACTORY

Trainee for two weeks, we learned about maintenance of aircrafts and aeroplanes engines and other parts manufacturing process in fighting planes.

June 2016

BAVARIAN AUTO GROUP (BMW)

Trainee for two weeks, worked in the workshop for troubleshooting, maintenance and on the diagnosis of the car's problems

PERSONAL SKILLS

Technical Skills

Unity3D	**Arduino**	**ROS**	**Git**
MATLAB	**Proteus**	**Python**	**Docker**
SOLIDWORKS	**AutoCAD**	**C++/ C#**	**Tensor Flow**

Organisational / managerial skills

- Chairman of Robotronics student club for 2 years.
- Project manager for science fair3 with over 60 projects(Video)
- Instructor for robotics courses. And coach for teams in many competitions.

skills gained through competitions

Teamwork, Working under pressure, Hard worker, Determinant.
Decision making, Fast learner, Innovative and creative.

Sports and Hobbies

Snowboarding, handball player and gymnastics, New technological trends.

Languages

ARABIC: Native. **ENGLISH: Excellent (Academic IELTS overall score 7)**