Mostafa Ashraf Ibrahim Ali El-Feel

EMBEDDED, ROBOTICS, AND AUTOMATION SYSTEMS ENGINEER

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Education

Bachelor's Degree in Mechatronics and Automation Engineering, Ain Shams University ICHEP "2018 - 2023"
GPA: 3.38/4.00

El Manara Language School for boys [English Taught] "2006 - 2018"
Grade: 94%

Graduation Project

"SADEM: Swarm of Autonomous Drones for Environment Mapping" Grade: A+

The project developed a swarm of autonomous drones equipped with stereo ZED cameras, designed to generate detailed 3D visualizations of indoor and outdoor spaces. Using inertial navigation, visual odometry, and wireless protocols for coordination, the drones communicated with an on-ground base station for computation. **The project received over 200k EGP in financial awards.**

Awards:

- 2nd place out of 183 teams in International Competition on Smart Cities (ICSC) Competition 2023.
- 2nd place in Ebdaa Festival in the IOT category 2023.
- ASRT Project Fund.
- ITIDA Project Fund.
- Dell Technologies Envision the Future finalists.

Other Projects

SADEM Simulation ROS2.	Aerial Robotics
CNN-Based Linear Regression for Car Thrust and Steering Prediction with PyTorch.	Autonomous Robotics
Semi-Autonomous Train Ticket Examiner Robot.	Autonomous Robotics
Turtlebot3 localization-2D Kalman Filter.	Autonomous Robotics
PID Longitudinal and Pure Pursuit Lateral Control for Bicycle Model.	Autonomous Robotics
A-Star-Path-Planning-Simulation-ROS2.	Autonomous Robotics
6-DoF-Manipulator-Simulation.	Robotics
Face-Detection-Simulation.	Computer Vision
Classification Problem Using CIFAR-100 Dataset with TensorFlow.	Computer Vision
Mini-Production-Line: An Automated Assembly System.	Automation
Automation Project using Timer and Counter.	Automation
Multi-Mode Calculator with Timer and Stopwatch Tiva C.	Embedded
On-demand traffic light control system built using AVR ATMEGA32.	Embedded
SALE transaction system using C programming language.	Embedded

Skills

Software	C++, Embedded C, Python, Object-oriented programming, Lua, Linux Ubuntu
Design	Inventor, SolidWorks, AutoCAD, ANSYS
Control	MATLAB, Simulink, Simscape
Autonomous	ROS1&ROS2, Vision (OpenCV), Path Planning, Perception, Localization, Control, Simulation
Automation	PLC programming, LOGO programming, HMI & SCADA Design, Siemens TIA Portal, Ladder Diagram, Factory I/O
Embedded	Arduino (AVR), ATMEGA32 (AVR), Tiva C (ARM), FreeRTOS, Proteus, IAR, Keil
Microsoft	Word, Excel, PowerPoint
Other	Leadership, Planning, Communication, Presentation, Management, Problem Solving, and Teaching
Linguistic skills	Arabic (Native Speaker), English (Advanced), German (A1)

Extracurricular Activities

Embedded Teaching Assistant, Ain Shams University "Jul 2024 - Present"

- Embedded Systems Teaching Assistant at Faculty of Engineering Ain Shams University, Teaching core embedded concepts, microcontroller programming, and RTOS.

Instructor at Autotronics Research Lab (ARL), Racing Team, Ain Shams University "Aug 2023 - Jan 2024"

- AI racing team workshop Instructor for the 2024 season, I taught ROS2 and CoppeliaSim, providing insights into robotic simulations and integrating CoppeliaSim with ROS2 for robust system development.

Electric Vehicles member, Racing Team, Ain Shams University "Oct 2021 - Mar 2022"

- Calculated the heat produced by the EV car and determined the required pressure to design an efficient radiator system for optimal heat dissipation.
- Utilized ANSYS for simulation to validate the calculations.

Public Relations member, IClub, IHub, Ain Shams University "2020 - 2021"

- Skilled PR professional adept at crafting compelling narratives and executing impactful media campaigns.
- Management skills.
- Presentation skills.

Training and Internships

Embedded Software Engineer Internship-Siemens EDA	"Summer 2024"
HMI and Scada systems training-Schneider	"Summer 2022"
Practical Applications of Mechanics and Automation-AIT	"Summer 2022"
Maintenance Engineer trainee-ADD-ME	"Summer 2021"
Bavarian Auto Group	"Summer 2021"
Access control-ZKteco	"Summer 2021"
CNC camp-RTE	"Summer 2020"
Programmable Logic Controller basic training-Schneider	"Summer 2020"