Eslam Mtrawy

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Education

Master of science, Mechatronics, Robotics and Autonomous Engineering — Feb 2024 – present
Faculty of Engineering Shams University — Cairo, Egypt

Bachelor of Science in Mechatronics and Robotics Engineering — 2018 – 2023
Faculty of Engineering Ain Shams University — cairo, Egypt
Graduation Project**:** Hybrid Driver Monitoring System (HDMS), Grade: Excellent
Mentorship: Valeo company, Dr Ibrahim Sobh, Eng.Islam Adel
Description:
• Designed to monitor driver behavior (concentration, attitude ,Activities) and health parameters (heart rate, glucose level) using camera-based technology.
• Utilized 2 camera frames for processing on a Raspberry Pi 4B, without the need for contact sensors.

Professional Experience

Valeo Techie Degree Trainee — Feb 2023 – Apr 2023
Gained expertise in OSEK, software testing, C protocols, RTOS, AUTOSAR, and Embedded C.

Embedded Software Intern at Si-Vision — Sep 2022 – Oct 2022
Developed embedded software solutions in C++ with advanced OOP principles.

IC Design Intern at SEMIENS — Feb 2022 – Mar 2022
ADCs Design and Verification

ITI Embedded Software Trainee — Jul 2022 – Sep 2022
Learned C, Embedded C, AVR interfacing, testing, automotive bus systems, and RTOS.

Intern at Human Centered Mechatronics (HCM) Lab, Ain Shams Virtual Hospital (AVH) — Jul 2022 – Sep 2022
Designed a reciprocating gait orthosis (RGO) for spinal cord injury patients.

Schneider Global Student Experience Trainee — Jun 2022 – Aug 2022
Studied electric vehicles, building controls, emergency power generators, and battery safety.

Intern at ELSEWEDY ELECTRIC — Sep 2022 – Sep 2022
MV premolded Cable accessories (Joint, Temrmination and ELBOW) UP to 36 KV

Courses

Deployment of Machine Learning Models — Oct 2024
ITI - Mahara tech

Deep Learning for Computer Vision — Oct 2024
Udemy

Practical Machine Learning for Data Scientists — Sep 2024
Udemy

Machine Learning & Deep learning — November 2022
8 courses Offered by stanford university ,Eng.Andrew NG (coursera)

Embedded systems Diploma (+176h) under supervision of Eng Mo Tarek — Jul 2022 – Oct 2022

Embedded systems (ITI internship) — Jul 2022 – Sep 2022

ADCs Design and Verification (SEMIENS internship) — Feb 2022 – Mar 2022

Automation control (Schneider Internship) — Jun 2022 – Aug 2022

Innovation and Entrepreneurship program (Egypt innovation) August 2022
ITIDA & TIEC - smart village

Projects

Parking Spot detection and counter- CV

Automatic number plate recognition EasyOCR - CV

Image Classifiers (Machine Vision project)
This project compared traditional and CNN classifiers for image classification, aiming to improve practical applications like object and facial recognition. The evaluation provided insights into the best approach.

Optimization & Image Classifiers (CI project)
optimization techniques for non-linear equations and image classification using neural networks with TensorFlow, achieving high accuracy and visualizing training process.

Embedded systems
Smart Home - Door Locker Security Systems - Traffic Light - Fan Speed Controller with Temperature - Distance Measuring System - Stepper Controller - StopWatch

CNC pen plotter
Deliverables (Mechanical system , Electrical &Electronic Systems , Control system , system integration). software : (UGS, Inkscape, GRBL, Arduino id, Produtos, MATLAB)

Maze Solving Robot ASU
Deliverables (Mechanical system , Electrical &Electronic Systems , Control system , system integration).

Manipulater Arm
Using inverse kinematic Equation, MATLAB and Arduino

Pitch Control Mechanism
Designed and fabricated a pitch control mechanism for a small wind turbine for the ISWTC in the Netherlands.

Learning management system (LMS) C++

Production line Simulation

Build a digital Avometer using Arduino - Design a digital flow meter.

- For more of my projects, please check my GitHub

Skills

Software:
C Programming - C++ & OPP - Python - HTML & CSS - MATLAB and Simulink - Arduino . PLC ladder diagram - PCB Design basics

Embedded Software
Embedded C - Software Testing - Automotive Bus((CAN, LIN &Ethernet) - SW Architecture - RTOS - OSEK - AUTOSAR

Professional Skills
ML, DL, Autonomous systems,CV TensorFlow, Camera, Edge computing, Agile

Activities

ASU Racing Team member 2019 – 2022

Deputy in Egyptian Youth Parliament(representing Beni Suef's Youth) 2021 – 2024

Coordinator at Hiah Karima Initiative 2021 – 2023

Instructor for computer skills and digital conversion at Ministry of Youth & Sports of Egypt. 2020 – 2021

Trainee Leadership Institute in Helwan. 2018

Graphic Designer, Editor and Film maker as a freelancer.