Hazem Abuelanin

Senior Computer Engineering student

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Summary

Senior Computer Engineering student specializing in robotics software engineering and AI with proven excellence in international competitions. Seeking roles in software engineering, autonomous systems, robotics, AI or embedded systems. Strong background in hardware-software integration with hands-on experience in software development, perception, sensor fusion, and embedded systems development.

Experience

Shoubra Autonomous Racing Team **2024 - 2025**

Founder & Team Lead

* Founded the first autonomous vehicle team at Benha University – Shoubra Faculty of Engineering.

* Led formation of the Shell Eco-marathon Autonomous Team.

* Established the university’s first F1TENTH autonomous racing team.

* Initiated the Formula Student Driverless Team.

* Designed the initial hardware framework for the college’s first autonomous vehicle.

Shoubra racing team **2023 - 2024**

Embedded systems team member

Participated as an embedded systems engineer in the team's electrical car by developing and integrating embedded systems using AVR Microcontrollers.

Education

Benha university, Shoubra faculty of Engineering Undergraduate

Bachelor of Computer Engineering | Expected Graduation: June 2026

GPA: 3.35/4.0

Projects

Machine Translation Model using Transformers **August 2024 - October 2024**

- Developed neural translation model combining Bidirectional GRU layers with Transformer architecture - Implemented attention mechanisms, embeddings, and sequence padding for contextual accuracy optimization - Utilized Python, TensorFlow, and NLP preprocessing techniques

Mobile Robot for Emirates Robotics Competition **December 2024 - April 2025**

- Designed autonomous navigation system for TurtleBot3 robot using depth camera point cloud processing - Implemented computer vision pipeline with OpenCV color detection and YOLOv10 object classification - Developed path planning algorithms for debris collection in unknown environments - Integrated depth estimation and sensor fusion for autonomous navigation

Designing a fully autonomous vehicle for Shell Eco-marathon Competition **Dec 2024 - May 2025**

- Architected complete autonomous driving system including computer vision, LiDAR processing, and sensor fusion - Developed motion planning algorithms optimized for energy-efficient control - Implemented real-time decision-making system for autonomous navigation

Autonomous Vehicle for Electrical Vehicle Rally in Egypt **February 2024 - July 2024**

Developed a full autonomous system using ROS and VREP with LiDAR, mono/depth cameras, and IMU.

Autonomous racing vehicle for F1TENTH competition **September 2024 - October 2024**

Developed Autonomous system for F1TENTH Competition using C++, ROS2 and LIDAR Processing algorithms.

Distance alarm ECU **March 2024 - April 2024**

System for detecting close objects to the rear of the car using AVR, used in the electrical vehicle rally

Skills

Programming

C - C++ - Python - Java - Dart

Robotics

ROS - ROS2 - Perception - Motion planning - SLAM - Controlling

Embedded software engineering

Embedded C - Microcontrollers interfacing - Communication protocols - Microcontrollers architecture

Artifical intelligence engineering

Data analysis - Machine learning - Deep learning - Computer vision - NLP

Tools & Frameworks

CARLA - CoppeliaSim - Gazebo - Docker - Git - Linux - TensorFlow - PyTorch - Hugging Face

Awards

Second place worldwide Shell Eco-marathon APC **June 2025**

Achieved second place out of 24 international teams representing Egypt in the prestigious Shell Eco-marathon competition for autonomous energy-efficient vehicle design and deployment

Third place over Egypt in the autonomous cars competition - EVER - Electric Vehicle Rally **August 2024**

EVER - Electric Vehicle Rally

Managed to clutch the third place in autonomous system design over Egypt against 15 top universities.

Fourth place globally at F1TENTH Competition **October 2024**

Managed to achieve 4th place globally out of 58 international teams at F1TENTH simulation league for autonomous cars racing at IROS 2024 competition.

Training

Digital Egypt Pioneers **April 2024 - September 2024**

Microsoft Machine Learning Engineer Trainee

Completed comprehensive machine learning engineering program covering advanced ML algorithms, model deployment, and production systems

Languages

Arabic

Native

English

Full Professional Working Proficiency