

# Abdelrahman Hazem Khalil

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Arabic: Native speaker | English: Intermediate

## Profile

Mechatronics Engineering graduate with hands-on experience in robotics, machine vision, and embedded systems. Built real-world systems using ROS 2, ESP32, and Zebra smart cameras.

## Education

Bachelor of Engineering (Hons.) in Mechatronics Engineering Asia Pacific University of Technology & Innovation (APU), Kuala Lumpur, Malaysia— *Graduated October 2025*

## Experience

### Machine Vision Intern:

Control Easy Technology Sdn. Bhd., Malaysia (Feb 2024 – Jun 2024)

- Built a real-time defect detection system using Zebra VS40 cameras.
- Tuned vision pipeline for accurate ECU defect identification.

## Projects

### APU Final Year Project 2025: AI-Controlled Humanoid Robot

- Developed ROS 2-based robot with voice-controlled navigation and gesture recognition.
- Integrated ESP32-based servo control, NLP chatbot, and MediaPipe gesture detection.

### APU Group Desing Project (2024 – 2025): Smart AGV for Chili Farm Monitoring:

- Led the machine vision module to detect diseased chili plants with a custom-trained model.
- Designed and tested an intelligent spraying system for targeted agricultural treatment.

## Technical Skills

**Programming:** Python, C#, MATLAB

**Robotics & Embedded:** ROS 2, Arduino, ESP32, Gazebo, RViz, SLAM (Basic)

**Computer Vision:** OpenCV, MediaPipe

**Tools & Software:** SolidWorks, Automation Studio, CX Programmer, CX Designer

