

# Yahia Ragab

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## EDUCATION

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### Ain Shams University

Bachelor of Engineering

Major in Mechatronics, Robotics and Automation

GPA: 3.1/4.0;

Military Status: Exempted

Relevant Coursework: Embedded Systems; Artificial Intelligence; AUTOSAR; Software Development; OOP; Machine Learning; Neural Networks; Computer Vision.

Cairo, Egypt.

**ACTUAL** 09/2022

## ACADEMIC PROJECTS

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- **[Smart Gate Access System – B.Sc. Graduation Project]** 06/2022
  - Designed and developed a smart parking/gate access system for our university's campus.
  - Was responsible for 1. Developing a license plate detection/recognition algorithm 2. Simulating the entire workflow ahead of implementation on Autodesk Inventor.
  - Created a dataset of 1000 Egyptian license plates to train the model and another 1000 plates to test it.
  - Software: OpenCV; Google Colab; YOLO; Python; Bash; Terminal Commands.
  - Hardware: Worked on Raspberry Pi4 running Ubuntu.
  - Model confidence level was 96% for detection and 88% for character recognition.
  - Applied a full-scale project management skeleton including risk management and budget plan and was assigned the leader of my group.
- **[Image Recognition CNN ML Algorithm]** 04/2022
  - Developed a ML model that takes an image file as an input and outputs the content of the image.
  - Software: OpenCV; Google Colab; YOLO; Python; CIFAR-100 Dataset.
  - Tweaked the parameters of the model (learning rate – used Adam optimizer – ReLU activation function - # of hidden layers & activation units – epochs – Kernel size – pooling & batch sizes)
  - The model confidence level was 98%.
- **[Autonomous Robotic Waiter]** 05/2021
  - Designed and implemented a semi-autonomous robot using ROS on Raspberry Pi4 running Linux.
  - Was responsible for the high-level portion of the code including vision algorithm and obstacle detection/avoidance.
  - Software: OpenCV; OpenSLAM; ROS; Python; Bash; Embedded C; Terminal Commands.
  - Hardware: Xbox Kinect; RPi4; TivaC Arm Processor; Interfacing and networking various actuators.
  - Developed the CV algorithm responsible for ArUco markers detection and interpretation.
  - Developed the CAN network responsible for communicating with the actuator-level software.
  - Developed an online SLAM algorithm using the Xbox Kinect camera and depth sensors that mapped the environment of the robot continuously updating any changes in it.
  - Robot 100% functioned, and our team scored an A+ (top 5%)
  - Applied a full-scale project management skeleton including risk management and budget plan and was assigned the leader of my group.
  - Performed mechanical and electrical design, mechanical manufacturing, embedded programming, and integration.
- **[Automated Production Line]** 12/2020
  - Designed and implemented an automated closed loop prototype production line using C language.
  - Was responsible for a 2-DOF robotic arm system that moved the product from the assembly stage to the storage area, then to the disassembly station.
  - Software: Embedded C; Autodesk Inventor.
  - Hardware: TivaC Arm Processor; Arduino Mega; Interfacing and networking various actuators.
  - Developed and mapped the robotic arm paths using C, limit switches, motor drivers, servo & stepper motors.

- Designed and 3D printed appropriate inserts, supports, and the robotic arm itself taking into account related stress analyses using Autodesk Inventor.
- Developed the CAN network responsible for communicating with the master controller of the production line.
- Applied a full-scale project management skeleton including risk management and budget plan and was assigned the leader of my group.

## PROFESSIONAL EXPERIENCE

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- **[ILF Consulting Engineers]** Abu Dhabi, UAE.  
[Electromechanical Inspector] 07/2023 – Present
  - Perform needed pre-inspections needed ahead of the equipment installation.
  - Review and study details of the equipment's datasheet and compare vs project's requirements.
  - Develop deep understanding of pump station equipment.
  - Lead installation crew members ensuring correct and high-quality work is being executed.
  - Interact with multiple stakeholders and document changes/updates effectively.
- **[Procter & Gamble]** Giza, Egypt.  
[Offline, Utilities & Sustainability Site Leader] 09/2022 – 07/2023
  - Responsible for impact plans, ratings, salaries, performance & results of 11 senior technicians.
  - Hosting regular 1:1s, career discussions, and performance reviews to make sure their well-being and business deliverables are on track.
  - Responsible for forecasting & managing 3 different budgets.
  - Led a massive automation project E2E that includes mechanical, electrical, & control aspects. The project reduced energy costs by \$50m annually.
  - Led multiple data visualization projects that exposed losses of \$25m in one month, \$16m of which were eliminated.
  - Led a productivity project through automation that reduced 2000 technician touches/interventions and 6000 minutes of effort annually.
  - Effectively implementing IWS5.0 fundamental practices in strategy setting through the PDCA (plan-do-check-act) cycle.
  - Developing and following through daily, weekly, monthly, quarterly, & yearly strategies for my department to ensure goals are achieved while performing the required gap analysis and action plans.

**Advanced skills:** Microsoft Excel, SAP, GE Proficy Applications, AB ControlLogix, Schneider Electric's PME, Petrokima's BMS.
- **[Amazon]** Cairo, Egypt.  
[Operations Intern] 06/2022 – 09/2022
  - Led a productivity project that drove a 40% improvement of a key delivery station metric while reducing required headcount by 28%
  - Closely monitored associates' performance to identify and eliminate operational losses and bottlenecks.
  - Took part of the leadership decision making process while working multiple times as a step-up Shift Manager.
  - Worked on a productivity study that revealed that associates are at 65% utilization.
  - Created a One Pager that flowed through leadership and led to a successful decision-making process.

**Advanced skills:** Amazon DS Tools, Amazon Transportation Tools, Microsoft Excel.
- **[Procter & Gamble]** Giza, Egypt.  
[Manufacturing Intern] 09/2021 – 03/2022
  - Led a digitization project that reduced paper usage by 600 sheets annually and increased learning efficiency by 20%.
  - Spearheaded 2 electrical technicians in troubleshooting a new piece of machinery and optimizing it for line operation.
  - Integrated repair guides into a virtual site tour which contributed towards the site's digital transformation.
  - Transformed workshop's repair guides and safety precautions into interactive videos that were then exported globally.

**Advanced skills:** Adobe Premiere Pro, Adobe Xd, Siemens SIMATIC STEP 7, Microsoft Excel, Adobe Photoshop.

- **[Schneider Electric]**

[Sales Intern]

Cairo, Egypt.

08/2021 – 09/2021

- Deep understanding of Schneider's sales network in Egypt.
- Performed a competition analysis ahead of an EGP 50M project in the New Alamein City.
- Got introduced to all different sales channels and suppliers' tiers Schneider has in Egypt.

**Advanced skills:** Microsoft Excel.

## **ADDITIONAL INFORMATION**

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- **Technical Skills:** Python, Embedded C, C++, ROS, OOP, MS Suite, SAP, AUTOSAR, Autodesk Inventor, Autodesk Fusion, Ansys, MATLAB, Solidworks, CATIA V5, HTML, CSS, JS, Angular, Mechanical Product Design.
- **Languages:** Fluent in Arabic, English; Conversational Proficiency in German.
- **Online Courses and Certificates:** Embedded Systems Diploma [IMT], AUTOSAR Diploma [MT], Machine Learning [Markov Analytics], Web Development Diploma Advanced [Udacity].