

# Nour Eldin Morsy

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[GitHub](#) | [LinkedIn](#) | [Portfolio](#)

## SUMMARY

Participated in one of the first RoboCup@Home Education international teams from the Arab and Middle East region. Co-authored an NLP research paper currently under review. Volunteered as a Host System Volunteer at ICPC. AI student at AASTMT University, Specialized in Robotics with research experience in Computer Vision, Autonomous Systems, and NLP.

## PROFESSIONAL EXPERIENCE

**Premio.Ai Company Intern**, Research Assistant, Jun 2023 – Oct 2023

Alexandria, EGY

- Exploring tokenization strategies and vocabulary sizes for enhanced Arabic language models by implementing various tokenization techniques in different LLM applications.

## EDUCATION

**University of Arab Academy for Science and Technology**, College of Artificial of Intelligence

Alamein, EGY

*Bachelor of AI in Artificial Intelligence: Intelligent System*, Sep 2020 – Aug 2024

*Minor Specialization: Robotics*

Cumulative GPA: 3.87/4.00

Relevant Courses: Deep learning, Advance Robotics, Reinforcement Learning

## SKILLS (Order of Fluency High – Low)

**Language:** Arabic (Native), English (Fluent), Russian (Basic)

**Computer Languages:** Python, HTML/CSS, C/C++, SQL, Java Script, Arm Assembly

**Tools:** ROS, TensorFlow, PyTorch, Streamlit, GIT, AWS, Docker, Rest API, Bootstrap, CUDA, FortiGate

## AI PROJECTS

**Arab Image Captioning, IN311 Deep Learning**, Aug 2022 – Dec 2022

- Designed an image captioning model using encoder-decoder structure to understand image content and generate meaningful caption in Arabic by using CNN encoder part and LSTM, GRU for decoder part.

**Optimization CNN using CUDA, GN001 High Performance Computing**, Mar 2023 – May 2023

- Investigated methods to optimize data storage and computation within Convolutional Neural Networks (CNNs) using CUDA for accelerated processing.
- Minimizing the parallel time to process an 16x32x32 images from 25 seconds to 2 seconds.

**Lane Following using Reinforcement Learning (Duckie Town), IN007 Reinforcement Learning**, Sep 2022 – Dec 2022

- Developed a reinforcement learning model to optimize lane following for autonomous vehicles using the Q-learning algorithm in a Gazebo simulation environment.

**Chess System using 2 Dobots Arms, RB310 Fundamentals of Robotics**, Mar 2023 – May 2023

- Designing A system for 2 Dobot arm robot playing chess in real time environment which uses camera calibration for detecting the corners and knows where the chess pieces and adding an AI engine which analysis the best move should the robot takes and using Dobot library for controlling the arm kinematics.

**Object Searching using Visual Language Models in Domestic Environment, IN412 Computer Vision**, Sep 2023 – May 2023

- Developed a model to detect and segment everyday objects in a domestic environment based on both Arabic and English language descriptions. The model utilizes a zero-shot object detection and segmentation approach.

**Chess System for 2 Simulated UR5 Arms, Introduction to Ros from UPC University**, Jan 2023 – Mar 2023

- Designed a chess-playing system for two simulated UR5 robots within a Gazebo environment. The project involved creating the robot kinematics model for control, implementing motion planning with ROS MoveIt API, and utilizing ARtags for chess piece pose detection to facilitate grasping.

**Social interactive Robot using Nao Robot via Arabic LLM, RB412 Cognitive Computing**, Sep 2023 – Dec 2023

- Implemented a social-interactive robot using the Chat-GPT large language model (LLM) on a NAO robot, enabling communication and support for elderly individuals in both Arabic and English.

## COMPETETION EXPERIENCE

**Egyptian Collegiate Programming Contest ECPC Qualifications**, Participated, Aug 2022 – Aug 2022

Alexandria, EGY

**Egyptian Collegiate Programming Contest ECPC**, 180th, Jun 2021 – Jun 2021

Alexandria, EGY

**RoboCup International @Home Education Division**, Participated, Jul 2022 – Jul 2022  
**RoboCup Junior National @Home Education Division**, Participated, Feb 2023 – Feb 2023

**Bangkok, TH**  
**Alexandria, EGY**

#### **VOLUNTEER EXPERIENCE**

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<b>Egyptian Collegiate Programming Contest ECPC</b> , Host Volunteer, Jun 2021 – Jun 2021	<b>Alexandria, EGY</b>
<b>Egyptian Collegiate Programming Contest ECPC</b> , Host system Volunteer, Aug 2022 – Aug 2022	<b>Alexandria, EGY</b>
<b>Arab Collegiate Programming Contest ACPC</b> , Host Volunteer, Mar 2021 – Mar 2021	<b>Luxor, EGY</b>
<b>Egyptian Olympiad Informatics EOI</b> , Sys Admin, Sep 2022 – Sep 2022	<b>Alexandria, EGY</b>
<b>International Collegiate Programming Contest ICPC</b> , Host system Volunteer, April 2024 – April 2024	<b>Luxor, EGY</b>

#### **PUBLICATIONS**

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**Alrefaie Mohamed, Morsy Nour Eldin, Saad El-Din Nada. (2024). Exploring Tokenization Strategies and Vocabulary Sizes for Enhanced Arabic Language Models.ACM.1-20 (Reviewing)**