# Nour Eldin Morsy

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GitHub | LinkedIn | Portfolio

## EDUCATION

**University of Arab Academy for Science and Technology**, College of Artificial of Intelligence                    **Alamein, EGY**
*Bachelor of Science in Artificial Intelligence*: Intelligent System, Sep 2020 – Present
*Minor Specialization*: Robotics
Cumulative GPA: 3.87/4.00
Relevant Courses: Deep learning, Advance Robotics, Reinforcement Learning

## SKILLS

**Language:** English (Fluent), Arabic (Native), Russian (Basic)
**Computer Languages**: Python, C/C++, SQL, Arm Assembly, Java Script, HTML/CSS
Tools: ROS, AWS, Rest API, Bootstrap, GIT, CUDA, Docker, Streamlit

## 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.

## 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.

**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.

## VOLUNTEER EXPERIENCE

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

## COMPETETION EXPERIENCE

**Egyptian Collegiate Programming Contest ECPC**, Participated, Aug 2022 – Aug 2022                    **Alexandria, EGY**

**Egyptian Collegiate Programming Contest ECPC**, 180th, Jun 2021 – Jun 2021      **Alexandria, EGY**
**RoboCup International @Home Division**, Participated, Jun 2022 – Jun 2022      **Bangkok, TH**
**RoboCup Junior National @Home Division,** Participated, Feb 2023 – Feb 2023      **Alexandria, EGY**

## PUBLICATIONS

**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)