ISRAA ABDELGHANY

AI ENGINEER

CONTACT INFORMATION

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PROFILE

Motivated Mechatronics Engineer and current AI & Machine Learning trainee at ITI, with a strong foundation in machine learning, deep learning, and natural language processing (NLP). Proficient in Python, TensorFlow, PyTorch, Scikit-learn, and key AI frameworks, with hands-on experience in developing, training, and optimizing models. Skilled in data preprocessing, model evaluation, and performance tuning for real-world AI solutions. Additional experience includes MATLAB, SolidWorks, and embedded systems (C/C++). Graduated from MUST University (GPA 3.84, ranked 1st in department). Eager to contribute to EJADA's AI Factory with strong technical skills, problem-solving abilities, and a deep passion for scalable and intelligent automation.

EDUCATION

Information Technology Institue (ITI) **Oct 2024 – Present**
9-months Track AI&ML scholarship
- Deep Understanding of AI, ML, DeepLearning and Nueral Networks

Bachelor of Science in Mechatronics Engineering **Sep 2019 - Sep 2024**
Misr University for Science and Technology
- GPA: 3.84

INTERNSHIPS & TRAININGS

AOI Training Academy, Basics of Programming & Operating CNC Turning & Milling Machines **Feb 2023**
- Basics of CNC technology, machine setup, and operation. Programming with G-code and M-code for turning and milling. Tool path generation, part production, and safety practices. with hands-on experience in producing parts using CNC machines.

AOI Training Academy, SIMATIC PLC Programming **Sep 2022**
- Programming and hardware setup in TIA Portal for S7-1200/1500. Data management using blocks (OB, FC, FB) and handling binary/digital operations.

Engovation, Fundamentals of Automotive Engineering **Feb 2022 – Apr 2022**
- Overview of automotive systems including engine, transmission, vehicle dynamics, electrical/electronic components, chassis, suspension, brakes, and basic maintenance.

AOI Training Academy, Helicopter Maintenance **Sep 2021**

- Mechanical and electrical helicopter systems, avionics, engine maintenance, aerodynamics, safety, and flight control operations.

Digital marketing level 1, Udacity - Egypt FWD **May 2021 – Sep 2021**

PROJECTS

Object-Oriented Programming using C++ link

Developed a collection of C++ programs applying object-oriented programming concepts. Projects include real-world applications like a bank system, student records, and library management. Focused on using classes, inheritance, polymorphism, file handling, and constructors to build structured, reusable code.

Text Clustering and Analysis Project link

A project that preprocesses text, extracts features (TF-IDF), clusters them using K-Means and hierarchical algorithms, evaluates the clusters (Silhouette & Purity scores), and visualizes results (t-SNE, dendrogram, etc.). It includes a FastAPI-based REST API for predictions and is deployable using Docker

Prediction of Obesity Risk link

Developed a predictive model using LightGBM to assess obesity risk based on demographic, dietary, and activity data. Applied data preprocessing, feature engineering, and model evaluation (accuracy, precision, recall, F1-score) using Python, scikit-learn, and Jupyter Notebook.

Credit Card Dataset with SVM Variants link

This project applies different Support Vector Machine (SVM) models to classify credit card transactions. The notebook includes data loading, basic preprocessing, feature scaling using StandardScaler, and training multiple SVM variants (linear, RBF, and polynomial kernels). You evaluate the models mainly using accuracy and classification reports. The project focuses on comparing SVM model performance but does not include advanced imbalance handling or feature engineering.

MNIST LSTM link

This project uses Long Short-Term Memory (LSTM) recurrent neural networks to classify MNIST handwritten digits by treating images as sequences. It reshapes image data into time steps to exploit temporal dependencies, building an LSTM model with TensorFlow/Keras. The project emphasizes sequence modeling in vision tasks, showcasing advanced use of RNNs beyond standard CNNs.

DL Models on CIFAR-10 & MNIST: link

This project implements convolutional neural networks (CNNs) on CIFAR-10 and MNIST datasets for image classification. It covers designing CNN architectures with convolution, pooling, dropout, and fully connected layers, training models, and evaluating their performance.

Autonomous navigation robot for unknown environment link

Developed a small car robot for 2D mapping of unknown areas using LiDAR, ROS, and C++. Implemented advanced mapping and localization with A* path planning, Gmapping, and Cartographer for accurate navigation and real-time mapping.

Bicycle design using ADAMS

Designed the mechanical structure with ADAMS, focusing on dynamic simulation and optimization to reduce manual effort and improve power transmission efficiency. The system enhances driving comfort and is user-friendly for all ages, allowing comfortable practice without fatigue.

Autonomous Obstacle-Avoiding Robot Using Arduino and MATLAB

Built an autonomous obstacle-avoiding robot using Arduino and MATLAB with FSM (Finite State Machine) for navigation. Sensors feed data to MATLAB, which directs the robot's movements.

SmartWatering system

A smart plant watering system using fuzzy logic with MATLAB Simulink and Arduino, controlling water based on sensor data to reduce waste and improve plant health.

LANGUAGES

Arabic : Native English : B2 Korean : A2 German : A1

PROFESSIONAL EXPERIENCE

Teaching Assistant in Mechatronics Department **Sep 2024 - Oct 2024**
MUST University

- Consepts of Digital Control Systems
- CNC

TECHNICAL SKILLS

- C++ , C and Python
- Machine Learning, Deep Learning, NLP
- TensorFlow, Keras, Scikit-learn, PyTorch
- Pandas, NumPy, Matplotlib, Seaborn
- OpenCV (computer vision)
- Git & GitHub
- Linux
- Robot Operating System (ROS)
- AWS (Amazon Web Services)
- Autonomous Navigation Algorithms
- MATLAB , Simulink and Simscape
- Arduino microcontroller programming
- AVR microcontroller programming
- Engineering control systems
- SolidWorks
- LabView
- CNC
- PLC
- Digital Markiting

PERSONAL SKILLS

- Teamwork & Communication
- Problem Solving
- Systematic and organized
- Leadership (AI Track Leader – Mansoura Branch, 9 months)
- Fast learner and self-motivated
- Adaptability and curiosity

COURSES

Getting Started with Git and GitHub, Coursera - IBM

October 2023 – November 2023

Algorithmic Toolbox, Coursera - University of California San Diego

July 2024 – August 2024

Intermediate Python, Data camp

December 2024

AWS Concepts, Data camp

January 2025

Understanding Cloud Computing, Data camp

January 2025

Introduction to Object-Oriented Programming in C++, Coursera, University of London

October 2024

C++ Programming: Classes and Data, Coursera, University of London

Novamber 2024

Object-Oriented Programming in C++: Functions, Coursera, University of London

December 2024

Python for Data Science, AI & Development, Coursera - IBM

Novamber 2023