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Mohamed Mostafa

GitHub
LinkedIn
Leetcode

Education

Ain Shams University B.S. in Computer and Systems Engineering   Sep 2018 - July 2023
Relevant Courses: Self-Driving Cars Engineer Nano-Degree, Machine Learning, Big Data Analytics. Database Systems, Parallel and Distributed Systems, Digital Image Processing.

Professional Experience

Data Science Intern   Aug 2023
Giza Systems   *Cairo, Egypt*
- Designed a RAG app for Question Answering complex technical documentations.
- Built a data processing pipeline for using Adobe PDF extract, and Unstructured Library.
- Used LangChain, ChromaDB, and Mistral 7B for building the app.

Research Intern   June 2023 - Oct 2023
Human-Centered Mechatronics Lab   *Cairo, Egypt*
- Designed a system to collect, process and visualize EEG data from eego sports BCI.
- Used OpenViBE to broadcast the data using Lab Streaming Layer.
- Build the processing pipeline and the visualizations using MNE library in Python.

Projects

Object Detection in Urban Environment   Dec 2023 - Jan 2024
- Designed and implemented an object detection system to accurately detect vehicles and pedestrians.
- Utilized Tensorflow Object Detection API to train several models on Waymo Open Dataset.
- Successfully deployed and trained the models on AWS Sagemaker.

Self-driving Car in Shell Eco-Marathon   April 2023
- Led a team to develop a self-driving car for Shell AI Competition 2023.
- Designed and implemented the autonomous system architecture.
- Used Python, C++, ROS, RViz, CARLA, and Linux for development.

Technical Skills

Programming languages: Experienced in Python and C/C++. Familiar with Java, C#.
Frameworks and Libraries: Experienced in Scikit-Learn, NumPy, Pandas, OpenCV, and Matplotlib. Familiar with LangChain, Keras, PyTorch, TensorFlow, PySpark, Django, and ROS.
Other: Git, Linux, MLflow, SQL, Docker, MongoDB, Hadoop, Cassandra, Azure, AWS, CARLA, and NiFi.

Extracurricular Activities & Competitions

Technical Team Lead in ASU Racing Team   Feb 2023 - May 2023
- Instructed technical sessions in ROS, Control Engineering, Path Planning, and Computer Vision.
- Led, and Organized a team of 9 members to build a self-driving car in CARLA.

Path Planning Member in ASU Racing Team   Oct 2021 - Oct 2022
- **Pitch the Future Competition** (2022): **1st place globally** for building and pitching a solution for carjacking problems facing the autonomous vehicles industry.
- **Shell AI Competition** (2022): **5th place globally among 40 teams**, built the path planner using A* and ACO algorithms, then deployed the planner on a self-driving car on CARLA simulator and passing constraints in the competition environment.