Mohamed Hussein

Machine Learning Engineer specialized in (Computer Vision and perception)

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Mid-Senior Machine learning engineer with +4 years of experience in both Research and industry. Specialized in computer vision, sensor fusion, and perception using both traditional and deep learning methods. Proficient in building and testing real-time industrial software solutions using python and C++. Experienced in the entire deep learning pipeline, encompassing data labeling, model training, validation, model optimization, dockerizating and deploying scalable models (MLOPS).

PROFESSIONAL EXPERIENCE

Computer Vision Engineer (Perception Team) • **[BOSCH](#)**, Romania   **May 2023 - Present**
- Research and develop computer vision algorithms for autonomous railways.
- Develop Perception kit using lidar pointcloud and ROS2 for the German trams and railways.
- Build localization kit for autonomous vehicles applications.

Computer Vision Engineer (Master Thesis) • **[Goodyear](#)**, Luxembourg   **Jan 2022 - Aug 2022**
- Advancing Road surface classification for AV (Dry, Wet, Snow, Ice) and Accurate Road Friction Estimation via the Integration of Camera, Tire Sensor Data, and Vehicle Dynamics Information
- Model is tested and deployed successfully during [Goodyear beyond tire event 2022](#).
- The research has been selected to be presented for presentation at the [IPCV Conference](#) in PPCU University, Hungary.

Deep Learning Researcher • **[Zewail City of Science and Technology](#)**, Egypt   **Dec 2019 - Aug 2020**
- Developed a state-of-the-art deep learning model for COVID-19 diagnosis from X-ray and CT scans.
- Created a user-friendly website using JavaScript and TensorFlow.js for hosting and deploying the deep learning model.
- Deployed the model on Google Cloud, demonstrating expertise in MLOps (Machine Learning Operations).
- Actively contributed to the development of an autonomous social robot using ROS (Robot Operating System).

Teaching Assistant (Part Time) • **[MUST University](#)**, Egypt   **Jan 2020 - April 2020**
- Teaching laboratory sessions for the course "Advanced Mechatronics Topics" focusing on robotics and AI.
- Teaching the fundamentals of academic research methodologies.

Advanced Driver Assistance Systems (Intern) • **[Continental AG](#)**, Romania
- Conducted research in sensor fusion, specifically utilizing Kalman filters.
- Collaborated on projects related to Adaptive Cruise Control and Emergency Brake Assist, employing lidar and radar sensors for enhanced vehicle safety and functionality.

EDUCATION

[Master of Science in Image Processing And Computer Vision](#) (University of Bordeaux - **France**)   **Sep 2020 - Sep 2022**
- Holding an international master between top ranked universities University of Bordeaux (France) and Universidad Autónoma de Madrid (Spain) in **Top 200 universities worldwide. Overall Grade: (4.36/5.0)**

Bachelor of Science in Mechatronics and Robotics Engineering (MUST University - **EGYPT**)   **Sep 2013 - Sep 2018**
- **(3.61/4.0) GPA (Excellent)**, ranked the fifth of my class.
- Graduation project: Social intelligence robot, with grade (**Excellent**), ranked the best project in the department.
- Trained and certified from **IBM, Egypt** in Artificial intelligence.
- Help students to learn more about Robotics by Involve In **IEEE** and Wonderbox Student Activities as Robotics Instructor.

ERASMUS+: Mechatronics And Robotics Engineering (LBUS University, **Romania**)   **Feb 2017 - July 2017**
- Accomplished with (**4.0/4.0) GPA (Excellent**)

PROJECTS & CONTRIBUTIONS

Computer Vision Engineer (Freelance - [TOP RATED](#)) • [Upwork](#)   **Jan 2022 - May 2023**
- Develop tire tread depth estimation and OCR analysis.

Computer Vision Engineer (Freelance,Remote) • USA   **Feb 2023 - May 2023**
- Facial and body animation using generative models and Deep fake for facial replacement.

Certifications & Accomplishments

[C++ Nanodegree (Udacity)](#) - [Sensor Fusion Engineer Nanodegree (Udacity)](#) - [Intel Edge AI Program (Intel, Udacity)](#) - [IBM Artificial Intelligence analyst - Mastery Award](#)- [IBM Artificial Intelligence analyst - Explorer Award.](#) - [Winning first place in kaggle competition](#) - The best team leader at Wonder-box.

SKILLS & TECHNOLOGIES

Python, C++, ROS2, CMake, PyTorch, Lidar, Camera, Sensor fusion, SLAM, MLOPS, FastAPI, Docker, Agile, Autonomous systems, Deep learning, Machine learning, Robotics, computer vision, Image processing, Generative AI, 3D Computer Vision, 3D reconstruction

Teaching

- Create computer vision tutorials on my [YouTube channel](#), focusing on topics related to lidar-camera sensor fusion.