MOSTAFA OTHMAN

Tokyo, Japan,

080-6936-5545 • mostafametwaly96@gmail.com • linkedin.com/in/mostafametwally • mostafa-metwaly.github.io

SUMMARY

Highly skilled robotics engineer and computer vision enthusiast, keen on developing and deploying emerging robotic systems for industrial applications. Competent in enhancing and streamlining robot operations, utilizing deep learning and computer vision techniques to increase efficiency and improve performance. Eager to provide innovative solutions to industry-specific issues, furthering technological progress in the robotics domain.

TECHNICAL SKILLS

Robotics: ROS, Docker, Github, Modelling and simulation, Hands-on experience Kuka-iiwa
Design and Prototyping: SOLIDWORKS, LabVIEW, MATLAB, Unity3D, Gazebo, 3D-printing
Programming: Python, C++, TensorFlow
Competitions: Participated in various robotics competitions including ROV, WRO, AirRace, Fighting Robots
Teaching: Taught robotics concepts to junior university students and mentored them in robotics competitions.

EDUCATION

Master's degree, Robotics and Computer Vision   Graduating Jul 2022
Innopolis University, kazan, Russia   4.5/5 GPA
Relevant coursework: Advanced Robotics, Computer Vision, Dynamics, Machine Learning
Bachelor's degree, Mechatronics Engineering   Graduating Jul 2020
Nile University, Giza, Egypt   3.71/4 GPA
Relevant coursework: Sensors and actuation,Kinematics, Circuits, Control theory

EXPERIENCE

Rapyuta Robotics, Tokyo, Japan: Robotics Software Engineer   Dec 2022 – Aug 2023
- Deployed and configured 40+ robots and 30 edge server PCs for production and demos, ensuring smooth operations.
- Facilitated effective communication and coordination across teams, ensuring alignment of goals and requirements.
- Resolved technical issues during robot operations, demonstrating strong troubleshooting skills and timely solutions.
- Led exhibition and trade show deployments of robot systems, overseeing setup, operation, and technical support.
- assisted exhibitors to effectively showcase robot capabilities, ensuring a seamless and impactful exhibition experience.

Laboratory of Intelligent Robotics Systems, Kazan, Russia: R&D Robotics Engineer   May 2021 – Jul 2021
- Tele-operation of a cable-driven robot 10x7m via Haptic device, enabling precise control and manipulation.
- Established seamless communication between haptic device (C++) and robot's Omron PLC controllers, driving motors and sensors. Implemented websocket protocol for bi-directional data exchange and velocity control.

PROJECTS

Master Project:Tele-operation and Resilient Peg-in-Hole Assembly with Kuka iiwa Robotic Arm   Dec 2021 – Jul 2022
Achieved resilient peg-in-hole assembly by combining tele-operation, haptic device, force feedback, shared autonomy.
- Tackled the challenge of assembling cylindrical objects in tight holes, surpassing the robot's accuracy limitations.
- Integrated computer vision techniques and implemented various control methods (full autonomy, teleoperation, shared autonomy, learning by demonstrations)
- Utilized advanced hardware (Kuka LBR iiwa with ROS) and touch haptic devices for enhanced user interaction, resulting in improved assembly performance.

Bachelor Project:Tele-operated Virtual Reality Control of a 7-DOF Industrial Robotic Arm   Oct 2019 - Jul 2020
Collaborated in a team of four to control and integrate Robot arm for digital twin, achieving first place in AIOT Egypt challenge
- Designed and built a full system for controlling a 7-DOF industrial robotic arm using Virtual Reality.
- Implemented a novel approach to integrate Virtual Reality with the robotic arm, utilizing forward and inverse kinematics with ROS and trajectory planning.
- Utilized Unity software for seamless integration of virtual reality interactions, UI and robot simulation with ROS.

PUBLICATION

Robotic Arm Pick and Assembly Using Deep Learning and Hybrid Vision/Force Control, Innopolis, RU: Aug 2021
- Published in 2021 International Conference "Nonlinearity, Information and Robotics" NIR Paper