



ANKUR KOHLI

ROBOTICS ENGINEER

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ABOUT ME

As a dedicated and innovative robotics engineer with a solid foundation in both hardware and software integration and data structures and algorithms, I bring a unique blend of technical expertise and problem-solving skills to the field. With hands-on experience in designing, developing, and deploying versatile systems, I am adept at pushing the boundaries of intelligent systems. My passion for advancing technology and my collaborative approach make me a valuable asset in driving forward-thinking projects and cutting-edge software solutions. I aspire to continuously expand my expertise in this dynamic intersection of disciplines, leveraging my knowledge to drive innovation and develop impactful solutions in the field.

CAREER IDENTITY

Aspiring Software Engineer with a strong foundation in Python, C++, Java, C, HTML, CSS, data structures, algorithms, and in developing accessible technologies.

SPECIALITIES

Artificial Intelligence
Machine Learning
Robotics

Reinforcement Learning
Software Development
Deep Learning

CERTIFICATIONS

- | | |
|---|----------------|
| • Amazon Web Services (AWS): Introduction to Machine Learning: Art of the Possible | September 2024 |
| • Amazon Web Services (AWS): Introduction to Robotics on AWS | September 2024 |
| • Google Cloud Skills Boost: Introduction to Generative AI | October 2024 |
| • Simplilearn: Innovating with Google Cloud AI | December 2024 |
| • Google Cloud Skills Boost: Responsible AI: Applying AI Principles with Google Cloud | January 2025 |
| • Google Cloud Skills Boost: Introduction to Responsible AI | January 2025 |
| • Google Cloud Skills Boost: Introduction to Large Language Models | January 2025 |

PROFESSIONAL EXPERIENCE

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| • NTT DATA Italia
<i>AI & Robotics Internship + Thesis</i> | June 2023 - Feb 2024
Italy |
| ◦ Integrated advanced sensors for mapping, enabling autonomous navigation for quadrupedal robots using SLAM (uses data structures such as graphs, point clouds, and trees and also uses enormous algorithms such as filtering, optimization, and so on) & ROS, and remote control for wheeled robots, demonstrating proficiency in both autonomous and remote-controlled robotics. | |
| ◦ Delivered a 20% increase in team productivity by facilitating inter-robot communication to enhance cooperation, showcasing strong skills in systems integration and collaborative robotics, using Robotics & AI techniques. | |
| ◦ Significantly impacted 20% increase in system efficiency and a 15% reduction in development costs through applying innovative problem-solving and technical expertise to advance the capabilities of robotic systems, using graph-based routing (data structures) and Dijkstra's algorithm, and emphasizing a hands-on approach and a deep understanding of data structures and algorithms, and hardware and software integration. | |
| • AeroSphere Pvt Ltd
<i>Automation Researcher</i> | June 2020 - Dec 2020
India |
| ◦ Reduced vehicle maintenance costs by 2% by developing an intuitive user interface within an IoT platform for electric vehicles, enabling real-time monitoring of connected devices and enhancing the user experience through advanced data visualization (UI design). | |
| ◦ Enhanced operational efficiency, leading to a 20% increase in overall productivity, by designing and implementing a real-time vehicle monitoring system, capable of recording and analyzing various operational parameters to ensure optimal performance and safety. | |

EDUCATION

- **University of Genoa**
M.Sc Robotics Engineering
- **University of Petroleum & Energy Studies**
B.Tech Mechatronics Engineering

September 2021 - March 2024
Italy

July 2016 - June 2020
India

TECHNICAL SKILLS

PROGRAMMING LANGUAGES

Python
C++
Java
C
HTML
CSS

LIBRARIES

TensorFlow
PyTorch
SLAM
OpenAI Gym
OpenCV
Yolo

SOFTWARE

Ubuntu/Linux
Docker
Git/GitLab
Gazebo
RViz

ROS 1
ROS 2
Anaconda
Unreal Engine

PROJECTS

• Artificial Intelligence Portfolio

- **Automated Warehouse Scenario Using PDDL 2.1:** This project aims to create an AI-planning warehouse optimization system enhancing order management, storage efficiency, and logistics through advanced planning, priority queues, plan graphs, and real-time analytics. [🔗]
- **Task and Motion Planning for Robotics in Coffee Shop Scenario:** The goal of this is to integrate task and motion planning for robotic navigation using PDDL-based planners, state-space graphs, BFS, heuristic search, and Euclidean distance computation. [🔗]

• Machine Learning/Reinforcement Learning Portfolio

- **Cervical Cancer Detection using CNNs and VGG16 Module - TensorFlow:** The object is to deploy Deep learning-based cervical cancer detection using VGG16 Convolutional Neural Networks (CNNs) in TensorFlow with comprehensive preprocessing, training, and evaluation. [🔗]
- **Convolutional Neural Networks (CNNs) to Process an Image - PyTorch:** The goal of this experiment is to implement Convolutional Neural Networks (CNNs) in Jupyter/Python using PyTorch for efficient image processing and analysis with deep learning techniques. [🔗]
- **Reinforcement Learning using A2C Algorithm & PPO Algorithm for Lunar Lander:** This experiment focuses on A2C and PPO-based reinforcement learning solutions for Lunar Lander efficient and robust lander control, optimizing policy iteration and value functions. [🔗]

• Frontend Web Development Portfolio

- **Restaurant Website - HTML & CSS:** This project hosts a restaurant website implemented using HTML, CSS, and some minor functions in JavaScript, demonstrating front-end development skills and basic web design principles. [🔗]

• Robotics Portfolio

- **Software Architecture for Mobile Robot Control:** This assignment involves developing a software architecture for controlling a ROS-based mobile robot by applying graph-based routing, Dijkstra's algorithm, and Python-implemented controller/UI nodes. [🔗]
- **Integration of Autonomous Surveillance Robot Architecture with Robotic Simulation for Indoor Environment Mapping and Patrolling:** This work integrates an autonomous surveillance robot, demonstrating semantic mapping, navigation, OpenCV ROS, and SLAM, implemented with data structures and algorithms in C++ and Python. [🔗]

REFERENCES

Claudia Lunini

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Relationship: Internship & Thesis Advisor

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