



SAGNIK GHATAK

AI and Robotics engineer with hands-on experience and strong interest in control and communication in autonomous systems.

CONTACT

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- Ingolstadt
- [LinkedIn](#)
- [GitHub](#)

SKILLS

- Robotics Control, Navigation and Manipulation
- ROS2, MoveIT2, IsaacSim, Gazebo
- Reinforcement Learning, Deep Learning
- Python, C++, MATLAB, Linux
- JIRA, Confluence, GitLab, Azure
(Beginner)

LANGUAGES

- English - C1
- German - A2

CERTIFICATIONS

- DeepLearning.AI - Advanced Learning Algorithms

EDUCATION

Masters in AI Engineering of Autonomous System

Technische Hochschule Ingolstadt

Thesis: Federated Multi-Agent Deep Reinforcement Learning for Mobile Robot Navigation: A Simulation Based Framework using IsaacLab

Bachelor of Technology in Electrical Engineering

Maulana Abul Kalam Azad University of Technology

Thesis: Speed Control of DC Motor using Fuzzy Logic

WORK EXPERIENCE

- Master Thesis
AI Motion Bavaria** Sep'25 - Feb'26
- Architected a Federated Deep Reinforcement Learning (FDRL) framework for multi-agent robotic navigation, specifically addressing constraints in communication-limited environments.
 - Benchmarked state-of-the-art Multi-Agent Reinforcement Learning (MARL) algorithms (MAPPO, IPPO) using IsaacLab and SKRL, establishing baselines for autonomous agent performance.
 - Evaluated policy robustness and transferability across diverse simulation scenarios, validating the system's viability for deployment in dynamic real-world settings.
- AI Motion Bavaria - THI Research Assistant** Mar'25 - Present
- Developed a complete Sim-to-Real pipeline for a Braccio robotic arm, successfully migrating manipulation tasks from Gazebo simulation to physical hardware using MoveIt 2.
 - Deployed autonomous navigation stacks on TurtleBot 4 Lite platforms, integrating ROS 2 Navigation (Nav2) for real-time sensing, obstacle avoidance, and motion planning.
- UniCredit SpA** Sep'24 - Present
- Working Student - Data Science and AI**
- Optimized production-grade data pipelines using distributed computing frameworks (PySpark) to process large-scale datasets, a skill directly transferable to processing high-volume sensor log data.
 - Developed and deployed Machine Learning models for customer analytics, focusing on model scalability and real-time inference capabilities.
 - Maintained CI/CD workflows and ensured system reliability, adhering to rigorous software engineering standards essential for safety-critical AI systems.
- Team Member - Driverless Schanzer Racing Electric e.V** Mar'24 - Aug'24
- Designed a real-time Camera Perception Stack utilizing YOLOv8 for object detection and RANSAC PnP for precise 3D pose estimation of track landmarks.
 - Implemented a dual Extended Kalman Filter (EKF) sensor fusion system to achieve high-precision vehicle state estimation under dynamic racing conditions.
 - Programmed adaptive path planning algorithms to optimize trajectory generation for high-speed autonomous navigation.
- Cognizant Technology Solutions India Pvt. Ltd** Oct'21 - Sep'23
- Data Engineer**
- Automated complex backend workflows using Python and UNIX shell scripting, reducing manual intervention by 60% and increasing system efficiency.
 - Engineered robust ETL processes and data architectures, reducing data processing latency by 30% to support time-sensitive analytical tasks.