

Sagnik Ghatak

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About Me

I am an aspiring AI researcher with a strong background in machine learning and a keen interest in advancing autonomous systems. I am passionate about developing intelligent, self-sustaining technologies and eager to contribute to innovative AI-driven projects. I am motivated by the intersection of research and real-world application and, am actively working towards building a career in this exciting field.

Portfolio

- **Github:** [click here.](#)
- **LinkedIn:** [click here.](#)

Skills Summary

Languages: Python, SQL, C/C++, Unix/Bash Scripting

Frameworks: Pandas, Numpy, Scikit-Learn, Matplotlib, ROS2, PyTorch, Flask

Simulation: Gazebo, Simulink

Platforms: PyCharm, Jupyter Notebook, Visual Studio Code

Soft Skills: Problem Solving, Communication.

Technical Interests: Mapping, Localization and Path Planning, Reinforcement Learning, Machine Learning and Data Science, Exploratory Data Analysis and Data Visualization, Data Pre-processing and Feature Engineering

Work Experience

Unicredit Spa

Working Student - PMO: Financial IT

Munich, Germany

September 2024 – Present

- Coordinate with project managers to monitor and ensure key performance indicators (KPIs) align with business requirements..
- Refine JIRA tasks, stories, and epics by collaborating with cross-functional teams to streamline project workflows.

Cognizant India

Programmer Analyst

Kolkata, India

October 2021 – September 2023

- Engineered ETL processes with Informatica PowerCenter, cutting data processing time by 30%.
- Automated tasks with UNIX and Python scripts, reducing manual intervention by 60%
- Enhanced database performance by 20% with optimized SQL queries, decreasing execution time by 15%.

PrepInsta India

Intern

Remote

January 2021 – July 2021

- Developed TypeScript-based web applications, delivering user-centric features and enhancements to improve overall user experience.
- Collaborated closely with design and product teams to translate UI/UX designs into high-quality, pixel-perfect HTML and CSS code, ensuring consistency across platforms and browsers.

Education

M.Eng - AI Engineering of Autonomus Systems

Technische Hochschule Ingolstadt, 2.3 GPA

Ingolstadt, Deutschland

October 2023 – Present

B.Tech - Electrical Engineering

St. Thomas' College of Engineering and Technology, 1.8 GPA

Kolkata, India

August 2017 – June 2021

Voluntary Work

Schanzer Racing Electric e.V. - THI Racing Team

Ingolstadt, Deutschland

Team Member - Driverless

March 2024 – August 2024

- Designed a dual Extended Kalman Filter (EKF) system for robust sensor fusion, integrating steering angle sensors, wheel odometry, and GPS data to enhance vehicle state estimation.
- Designed a path planning algorithm for autonomous driving in dynamic environments to generate optimized paths for acceleration and maneuvering, ensuring precise and adaptive navigation.

Projects

Reinforcement Learning: Tower of Hanoi

Github

- Designed and implemented a custom environment for the Tower of Hanoi using the Gymnasium framework.
- Developed a Q-learning agent to solve the Tower of Hanoi problem.
- Trained the agent with various parameters and visualized the learning process and results.
- Utilized reinforcement learning techniques to optimize the agent's performance in solving the puzzle efficiently.
- Built a reinforcement learning agent to adapt in the tower of hanoi environment using Deep Q-Network(DQN)

Certificates

Azure Data Fundamentals (Microsoft)

Supervised Machine Learning: Regression and Classification (DeepLearning.AI)

Advanced Learning Algorithms (DeepLearning.AI)