

Hardaat Singh Baath

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EDUCATION

B.E. in Computer Science, Birla Institute of Technology and Science, Pilani [🔗](#)

November 2021 – present
Sancoale, Goa, India
- CGPA: 7.55

SKILLS

Programming Languages

C, C++, Python, Java, NodeJS, JavaScript, MATLAB

Libraries

Numpy, Matplotlib, Pandas, Seaborn, OpenCV, Scikit-learn

Framework

ROS, PyTorch, Tensorflow, Keras

Tools

Gazebo, Docker, AWS, Git and GitHub, Arduino, Hugging Face

Soft Skills

Public Speaking, Canva, Creative Writing

Languages

English, Hindi, Punjabi

RELEVANT COURSES

Computer Programming | Data Structures and Algorithms | Database Management Systems | Operating Systems | Computer Networks | Computer Architecture | Probability and Statistics | Linear Algebra | Differential Equations | Multivariate Calculus | Machine Learning | Brain Inspired Deep Learning

Online Courses

- IBM AI Engineering Specialization [🔗](#)
- CS231n Stanford Computer Vision [🔗](#)
- AMRx: Autonomous Mobile Robotics, ETH Zurich [🔗](#)

AWARDS

National Qualifiers, NXP AIM 2024

August 2024

- Among top 15 teams that took part in NXP AIM 2024 Regionals.
- Made an autonomous RC car with lane following, sign detection

Excellence Award (Overall),

Internation Rover Challenge, Bangalore

January 2023

- Won Best Overall Rover award, 2nd in the Autonomous Challenge and 4th overall.

EXPERIENCE

Machine Learning Engineer, Nurix.AI [🔗](#)

January 2025 – present | Bangalore, India

- Developed an **Emotion Recognition Model** in PyTorch using **IEMOCAP, RAUDES, and CREMA-D** datasets, achieving an **87% accuracy** in emotion classification.
- Implemented a **Multimodal** and **Multilingual Retrieval-Augmented Generation (RAG)** pipeline, optimizing inference speed and achieving **p95** latency of **2.93 seconds** with **96% accuracy**.
- Contributed to the development of a **market research platform**, implementing **LLM driven** news analysis and action item generation pipeline.

AI Engineer, DG Takano [🔗](#)

May 2024 – July 2024 | Tokyo, Japan

- Developed an automated testing system with **ESP32** for **Cloud Data logging**, improving productivity, speed and reducing manual effort
- Integrated **Arduino Cloud** and **Slackbot** for real time alerts, enabling live remote monitoring of the setup.
- Developed an **Automated G-code generation system** that accelerated prototyping by learning from previous data, significantly improving the production of G-Code generation for machine operators.

Research Intern, CSIR - CEERI, Pilani [🔗](#)

June 2023 – August 2023 | Pilani, India

- Advisor: Dr Dhiraj Sangwan [🔗](#)
- Developed a DL-based pipeline for damage generation, segmentation and restoration of Rajasthani Wall Murals.
- Used models like **StyleGAN2-ada-PyTorch** for damage generation, **UNet++** and **DeepLabV3+** for damage segmentation and **AOT-GAN** and **Partial Convolutional Network** for image inpainting.

PUBLICATIONS

Damage Segmentation and Restoration of Ancient Wall Paintings for Preserving Cultural Heritage,

International Conference on Computer Vision and Image Processing, 2023 [🔗](#)

Hardaat Singh Baath, Soham Shinde, Jinam Keniya, Priyanshu Ranjan Mishra, Anil Saini, Dhiraj Sangwan

PROJECTS

Transformers for Stock Market Prediction, Supervised Project (ongoing)

February 2024 – present

- Advisor: Dr. J K Sahoo [🔗](#)
- Exploring and implementing an **Transformers-based time series algorithm** for Stock Market Prediction using features like **Signal line**, **MacD line**, **EMA** etc with **CNN-based** feature extraction.
- Implementing a trading algorithm with transaction costs and taxation for realistic simulation of stock markets using **NIFTY 50** and **S&F 500** market datasets.

Distributed Deployment Platform, Course Project

January 2024 – June 2024

- Implemented a distributed deployment platform that deploys Github repositories on web using **AWS S3** and **ECS** services.
- Added backend with **API server** and **Reverse Proxy** using **NodeJS** for automated deployment and real time logs..
- Logs saved on **PostgreSQL Database**, using **Kafka** Server as an intermediate service.
- Added support for different types of languages like ReactJS, NodeJS, HTML etc to enable **language based deployment**.

MENTORSHIP

Subsystem Lead, Autonomous Subsystem, Project Kratos

May 2023 – May 2024 | Sancoale, India

- Leading a team of 10+ members in the Autonomous System.
- Doing Research and Development of the current system and involved in collaboration with other subsystems