

Arshdeep Singh Bhankhar

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Experience

Software Engineer

IIT Ropar Technology and Innovation Foundation (iHub – AWaDH)
(Working onsite at CSIR-CSIO, Chandigarh)

Chandiagr, India
Sept 2024 – Present

- Fine-tuned large language models (LLaMA 3/3.1, Gemini, DeepSeek, Mistral) for agriculture domain tasks using PEFT techniques including LoRA and QLoRA, resulting in domain-adapted models with improved task-specific performance
- Designed and executed synthetic data generation pipelines using LLMs to augment low-resource datasets, enabling more robust fine-tuning and downstream generalization
- Employed Unsloth for memory-efficient training and optimization of fine-tuning workflows; preprocessed and structured datasets for supervised instruction tuning
- Deployed quantized LLMs locally using Ollama with GPU acceleration for rapid prototyping and inference testing in resource-constrained environments
- Leveraged high-performance computing (HPC) infrastructure for model training via PBS job scheduling scripts, optimizing GPU and memory utilization across distributed compute nodes.

Software Development - Student Intern

Department of Computer Science and Engineering, IIT Ropar

Punjab, India
Jan 2024 – July 2024

- Enhanced a low-code platform (**DocFlo ERM**) enabling organizations to design digital document workflows with features like approval routing, attachments, and form referencing.
- Contributed to both front-end (Vue.js) and back-end (Flask, PostgreSQL) development, improving scalability and usability of the system.
- Developed an **Electricity Billing System** for the work and estate Department of campus, digitizing manual workflows, and enabling online bill access with multi-format downloads.

Education

Thapar Institute of Engineering and Technology

Bachelor of Engineering – Computer Science and Engineering

Patiala, Punjab, India
Sept 2020 – July 2024

Rayat International School, Ropar

12th Grade – CBSE (Science – PCM)

Ropar, Punjab, India
July 2018 – May 2020

Technologies

Frameworks / Tools: FastAPI, Flask, Django REST, VueJS , ReactJS Router, Git, GitHub, Python-Streamlit.

Languages: C, C++, Python.

Databases: MySQL, PostgreSQL