

Tirath Bhathawala

📞 9137583387 ✉ tirath.bhathawala@gmail.com [🌐 LinkedIn](#) [🐙 GitHub](#) [📁 Portfolio Website](#)

OBJECTIVE

Aspiring **AI researcher** seeking a **Summer 2025 research internship** to contribute to cutting-edge work in Machine Learning, Explainable AI, and Multimodal AI, with a focus on improving model interpretability and robustness.

EDUCATION

SVKM's Dwarkadas J. Sanghvi College of Engineering

B.Tech in Computer Engineering with Honors in Intelligent Computing (CGPA: 9.23)

Mumbai, India

Nov 2022 – June 2026

Mumbai Junior College of Arts, Commerce and Science

HSC Science with CS (12th: 91.5%, MHTCET rank of 719 among 200,000+ candidates)

Mumbai, India

2019 – 2021

EXPERIENCE

SupervAI sor AI

AI Intern

March 2025 - Current

Hybrid, Mumbai, India

- Developing an **AI-agentic system** powered by **dynamic graphs** and **real-time factory operation databases** to support **supervisor workflows**, detect anomalies, and dynamically incorporate **worker-input special conditions**.
- Optimizing a **RAG-based legal document deficiency detection system** by aligning with **RERA rules and SOPs**, and leveraging **generated metadata** to enable **targeted vector search**, reducing redundant LLM calls.
- Evaluating existing computer vision models (**human age and gender detection, queue detection, emotion recognition, theft detection**) for performance and adaptability in **real-world retail supermarket environments**.

Indian Institute of Technology, Patna

Research Intern

October 2024 - May 2025

Remote, IIT Patna

- Designed **MetaSearch**, a **search-augmented, reasoning-based AI Agent** for **consensus resolution in peer review**, combining **disagreement detection** and **fact-grounded synthesis** to automate and enhance meta-review decision-making.
- Developed a novel LLM-argumentation system for peer review, evaluating 900+ ICLR reviews (**PeerRead Dataset**) using leading LLMs (**Llama 3.1, Mixtral, Gemini2, GPT-4o**), achieving high inter-annotator agreement (**Cohen's Kappa = 0.834**).
- Designed a heuristic framework, based on **Cognitive Load and Discourse Analysis theories**, for optimizing peer review lengths through information density analysis, integrating metrics for content relevance and argument strength.

Nvelop Technologies Oy

AI Intern

August 2024 - February 2025

Remote, Helsinki, Finland

- Authored a whitepaper implementing an evaluation pipeline for **LLM-based requirement generation**, benchmarking **DeepSeek R1, GPT-4o, Gemini 2.0, LLaMA 3.2** across diverse **NLP metrics** including BLEU, Levenshtein and Jaccard Similarity.
- Devised automated workflows in **Azure AI Promptflow** for Retrieval Augmented Generation (RAG) tasks, for 50+ RFPs.
- Optimized chunking strategies and top-p sampling parameters, **reducing document retrieval perplexity by 15%**.
- Authored a **comprehensive 70-page documentation** detailing the mapping of AI APIs (**Insomnia**) to the frontend (**NextJS**).

UIUC+ Summer Research Program

Research Assistant

June 2024 - July 2024

Remote, Urbana-Champaign, USA

- Investigated challenges in **C to Rust transpilation**, summarizing findings from 5+ research papers (**VERT, Lost in Translation, etc.**) and evaluating the results of existing transpilers and CodeLLMs.
- Analyzed LLM-generated C and Rust code, identifying and categorizing bugs, improving **code quality evaluation frameworks**.

PavePilot AI

Python (LLM) Development Intern

June 2024 - July 2024

Remote, USA

- Developed an AI-driven marketing content pipeline by evaluating multiple image models (**BRIA, Stable Diffusion, Midjourney**) and implementing image processing techniques with **OpenCV**.
- Created platform-specific content (**LinkedIn, Instagram, Twitter**), designing customized AI-generated prompts and style guides for brand-aligned product advertisements using GenAI tools.

EXTRA CO-CURRICULAR

DJSCE ACM | *Research Head*

- Spearheading personalized programs for **10+** students, guiding them through domain-specific learning and academic paper writing.
- Mentored students in **CV, NLP, IS and Quantum Computing**, resulting in strengthened academic research skills.
- Designed tasks in **Python, research methodology, and technical writing** to enhance mentees' skills in structured research.

PROJECTS

DigniFy | *HuggingFace, Tensorflow, Render, FastAPI*

- DigniFy is an AI-powered **mobile application** for **multimodal, multilingual** hate speech detection.
- Fine-tuned **DistilRoBERTa** for English and Hinglish text, implemented **OCR-based text extraction** for images, designed an **audio processing pipeline** with STT-TTS, and integrated all modalities into a unified **video processing pipeline**.
- Developed an **AI Agent** integrating all modality-specific models as tools, enabling detection through interaction with four LLMs (**DeepSeek R1, GPT-4o, Gemini 2.0, LLaMA 4.0**), and conducted comparative evaluation across model outputs.
- Authoring a **research paper** detailing the system's need, methodology, performance, and real-world impact.

Optima | *OpenCV*

- Optima revolutionizes healthcare through real-time analysis of asthma pump usage, implementing **posture detection, shake tracking, and pump-to-face distance measurement** to provide patient behavior insights and treatment recommendations.

RakshakRita | *BERT, NLTK, Seaborn, networkx, Plotly*

- RakshakRita is a **QR-based Police Feedback System** empowering citizens to voice policing opinions, featuring **dynamic feedback reports** with interactive **geo-spatial visualizations** of police station performance.
- Implemented NLP tasks like **language translation, zero-shot classification, spam detection, chatbot creation**.

ML and CV Fundamentals | *Tensorflow, Keras, PyTorch*

- Implemented **medical image segmentation** models for the **RSNA Breast Cancer dataset** (pydicom, torchvision).
- Developed various CV models **object detection, image classification** for **Oxford-IIIT, MNIST, and CIFAR10** datasets.

TECHNICAL SKILLS

Relevant Coursework: Data Structures & Algorithms, AI, ML, Data Warehousing & Mining, Advanced DBMS, OS

Programming Languages: C/C++, Python, Java, HTML/CSS, JavaScript, SQL, React, Rust

Tools: Linux, Git, Kaggle, Google Colab, Docker

Frameworks/Technologies: Tensorflow, Keras, PyTorch, OpenCV, AzureAI, FastAPI, NLTK, Streamlit

Course Certifications: CS50P by Harvard University (Online), The Odin Project

Coding Profiles: CodeChef LeetCode HackerRank

ACHIEVEMENTS

All India Rank 499 in GATE Data Science and Artificial Intelligence examination from over 60,000 students

Winner in CodeBounty 2024, a college competitive programming contest

Finalist in the Rajasthan Police Hackathon 2024 (ML Lead)

Finalist in the Gujarat G20 Summit Hackathon 2023 (ML Lead)