Tirath Bhathawala

9137583387 | tirath.bhathawala@gmail.com | LinkedIn | GitHub | Portfolio Website

EDUCATION

SVKM's Dwarkadas J. Sanghvi College of Engineering — Mumbai, India
B.Tech in Computer Engineering with Hnrs in Intelligent Computing (CGPA - 9.24) — *2022 - 2026*

Mumbai Junior College of Arts, Commerce and Science — Mumbai, India
HSC (12th Boards - 91.5%, MHTCET - 99.5%) — *2019 - 2021*

EXPERIENCE

IIT Patna — October 2024 - Current
Research Intern
- Developed a novel LLM-argumentation hybrid system for peer review assessment, evaluating 900+ ICLR reviews using state-of-the-art models (Llama 3.1, Mixtral, Gemini2, GPT-4), achieving strong inter-annotator agreement (Cohen's Kappa = 0.934) and implementing BAF and DF-QuAD Argumentation Frameworks for transparent scoring
- Architected a heuristic framework for optimizing peer review lengths through information density analysis, integrating metrics for content relevance, argument strength, and readability to establish optimal review length thresholds

Nvelop Technologies Oy — August 2024 - November 2024
AI Intern
- Devised workflows in Azure AI Promptflow for automated document processing, generation and retrieval tasks
- Optimized chunking, overlap and top-p parameters for 50+ RFPs, improving document retrieval perplexity by 25%

PavePilot AI — June 2024 - July 2024
Python (LLM) Development Intern
- Developed an automated marketing content pipeline by evaluating multiple AI image models (BRIA, Stable Diffusion, Midjourney), implementing image processing with OpenCV and Pillow, and crafting platform-specific (LinkedIn, Instagram, etc) prompts with style guides for brand-aligned product advertisements

UIUC+ Summer Research Program — May 2024 - July 2024
Research Assistant
- Investigated the challenges and potential solutions in C to Rust translation by summarizing 5+ research papers (VERT, Lost in Translation, etc.) and analyzing the results of well-known transpilers and CodeLLMs
- Evaluated the quality of LLM-generated code by identifying potential bugs in the generated code snippets (C and Rust)

Extra Co-Curricular

DJSCE ACM | *Research Head*
- Leading personalized research mentorship programs for 50+ students, where research head collaborates individually with mentees through domain-specific learning and paper writing phases, fostering individual growth in academic research and publication

PROJECTS

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 precise patient behavior insights and treatment recommendations

RakshakRita | $BERT, nltk, seaborn, matplotlib, networkx, plotly$
- 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 and sentiment analysis.

ML and CV Fundamentals | $tensorflow, keras, pandas$
- Implemented deep learning models for medical image segmentation using the RSNA Breast Cancer dataset (pydicom, torchvision)
- Developed computer vision algorithms for object detection and image classification (CNN) (Oxford-IIIT Pet, MNIST, CIFAR10)

TECHNICAL SKILLS

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
Relevant Coursework: Data Structures, Analysis of Algorithms, Data Warehouse and Mining, Artificial Intelligence, OOPS

ACHIEVEMENTS

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)