

# Nandan M Naik

+91-82772 02042 | [nandanmaheshnaik@gmail.com](mailto:nandanmaheshnaik@gmail.com) | [LinkedIn](#) | [GitHub](#)

## PROFILE

AI and Python professional who works well with others, with strong skills in algorithms, data handling, and machine learning. Experienced in teaming up with different groups, aligning goals, and creating a positive, results-focused environment. Passionate about using technology to solve tough problems and always open to learning and feedback




## EDUCATION

- R.N.S Institute of Technology** Dec 2022 – August 2026  
*Bachelors in Artificial Intelligence and Machine Learning*  
Bengaluru, India
  - GPA: 8.63/10.00

## PROFESSIONAL EXPERIENCE

- ABB** April 2025 – June 2025  
*Research Intern*
  - Developed and implemented **Bezier curve algorithms** in the **PixelPaint** automation project to improve testing precision, **robotic path planning**, motion control, and trajectory optimization for efficient automated painting operations.
  - Collaborated with **cross-functional teams** to deploy curve models in the real-time testing pipeline using Python and mathematical modeling, enhancing trajectory optimization and overall system reliability

## PROJECTS

- IntelliQuery: Revolutionizing Information Retrieval with RAG**   
*Tools: Python, Llama 3.2, Hugging face transformers, Ollama, Langchain, ChromaDB, FAISS.*
  - Developed an advanced **RAG system** leveraging LLAMA3.2 for efficient computation, significantly reducing retrieval latency while maintaining high response accuracy
  - Integrated vector search using FAISS** with fine-tuned transformer-based LLMs, boosting retrieval and query processing speeds by 15% for more precise responses, measured across diverse domains.
  - Planning on further improvements to the model by using techniques such as **BM25, query expansion, and re-retrieval.**
- HeartHz : Where sound meets sentiment**   
*Tools: Python, Tensorflow, Keras, Librosa .*
  - Built** a Speech Emotion Recognition (SER) system with a custom neural network, processing **1,500+ audio samples** and achieving **90.94% accuracy** in emotion detection.
  - Integrated LSTM networks** to capture temporal patterns in speech, improving performance by **12% over baseline CNN models** and reaching an **88% F1-score**.
  - Trained and fine-tuned** on benchmark datasets (TESS & RAVDESS), enabling **real-time inference (<200ms latency)** and ensuring generalization across diverse emotional contexts.
- Skin Cancer Classification**   
*Tools: Python, OpenCV, Resnet, Tensorflow, Keras, Mobilenet.*
  - Developed** a deep learning-based skin cancer classification system achieving **82% precision** on the **HAM10000 dataset (10,015 dermatoscopic images)**, enabling reliable categorization of multiple skin lesion types
  - Integrated ResNet and MobileNet architectures** for feature extraction, improving accuracy by **~10% over baseline CNN models** and ensuring robust performance across **7 skin cancer classes**.
  - Optimized data pipeline** through preprocessing and augmentation in OpenCV, reducing overfitting and enhancing model generalization, resulting in a **15% increase in validation accuracy**.

## TECHNICAL SKILLS

- Programming Languages:** Python, C/C++, Java, HTML/CSS, Cypher.
- Tools / Libraries:** TensorFlow, PyTorch, Scikit-learn, Keras, OpenCV, Pillow , Streamlit, Flask, FastAPI, Langchain, Hugging face.
- Version Control:** Git/Github.
- Database Management:** Neo4j.
- Relevant coursework:** Data Structures, Algorithm Designs, Computer Networks, System Design.

## HONORS AND ACHIEVEMENTS

- Delivered a talk on **GenAI trends** to 200+ faculty members, breaking down LLM advancements and prompting strategies for real-world AI applications jointly organized by **RNSIT and BMSCE** from 23<sup>rd</sup> to 28<sup>th</sup> of September 2024.
- Finalist, AMD Pervasive AI Contest** – Developed an AR mapping system, along with my team, to enhance navigation using AI-driven spatial recognition.

## COCURRICULAR EXPERIENCE

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- **Head of the Technical committee**

*InnovAlton / RNSIT*

- **Served as a key technical member** of the club, spearheading the organization and facilitation of student development sessions and coding challenges. Led initiatives to enhance technical skills and foster a collaborative learning environment, while overseeing the execution of challenges designed to hone problem-solving and algorithmic thinking among participants.

- **Member of Cultural Activity team**

*DMC @ CAT / RNSIT*

- **Member of the Cultural Activities Team** at RNSIT, organizing festivals and events. As part of the **Digital Media Committee**, I manage photography, videography, and media content for event promotion.

## ADDITIONAL INFORMATION

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**Languages:** Hindi, English, Kannada, Konkani.

**Interests / Hobbies:** Travelling, Riding my motorcycle, Photography.

**Nationality:** Indian.