

Hemanth Kumar Musirana

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Summary

Final-year B.Tech (Computer Science – AI & Data Science) student with hands-on experience in Python, Java, SQL, and full-stack development across the Software Development Life Cycle (SDLC). Research Intern at IIT (ISM) Dhanbad with proven ability to design, test, and validate AI/ML pipelines on real-world datasets. Hackathon runner-up with a demonstrated agile mindset, collaborative approach, and passion for building innovative digital solutions. Seeking opportunities to contribute across Data & Analytics, Testing Services, and Digital Technologies.

Skills

- **Languages:** Java, Python, C, C++, SQL
- **AI/ML & Analytics:** Scikit-learn, TensorFlow, PyTorch, CNN, Pandas, NumPy
- **Frameworks & Tools:** Flask, Django, Spring Boot, Git, AWS (EC2), Figma, Postman
- **Testing & SDLC:** Functional Testing, Model Validation, UAT Concepts, Agile, CI/CD Basics
- **Databases:** SQL, Postgres, Data Preprocessing
- **Core Strengths:** Problem Solving - DSA, System Design, Team Collaboration, Attention to Detail

Experience

Research Intern — IIT (ISM) Dhanbad

May 2026 – Present

Under Prof. Partha Pratim Roy, Dept. of CSE — Medical Image Classification using Deep Learning

- Developed and tested CNN-based deep learning pipelines in PyTorch following end-to-end SDLC, from data preprocessing and model design to validation and evaluation, for automated PCOS detection from clinical thermal images.
- Designed explainable AI (XAI) pipelines using Grad-CAM and performed functional testing and performance benchmarking (F1-score, AUC) to validate model accuracy and identify thermal biomarkers.
- Collaborated with IIT faculty using transfer learning, data augmentation, and iterative model refinement to solve real-world healthcare challenges.
- Reviewed and implemented XAI literature including Grad-CAM, Counter-CAM, and Explainable Deep Temporal Modeling to build a CNN + Grad-CAM + CycleGAN counterfactual pipeline.

GeeksforGeeks Campus Ambassador — Siddhartha Institute

Dec 2024 – Dec 2025

- Led community-building initiatives connecting 500+ students with technical opportunities and organized the first major technical event at the institution.
- Conducted workshops on Linux fundamentals and System Design, simplifying technical concepts for student audiences and strengthening communication and leadership skills.

Achievements

Runner-Up — Amaravati Quantum Valley Hackathon (AQVH) 2025

Feb 2026

QADIS — Quantum Anomaly Detection Intelligence System

- Built and validated a multi-domain AI/ML platform using Python and Scikit-learn, achieving 94% fraud detection, 91% sepsis prediction, and 73% zero-day attack detection across healthcare, finance, and cybersecurity datasets.
- Engineered and benchmarked optimized machine learning models, achieving 7–24% performance improvements over baseline approaches through iterative testing and refinement.
- Presented the solution during a 40-minute evaluation and received recognition from APSICHE Chairman Prof. K. Madhu Murthy for innovation and practical impact.

Education

Siddhartha Institute of Science & Technology

B.Tech in Computer Science (Artificial Intelligence & Data Science)

2023 – 2027

Expected 2027

Sri Viswa IIT & Medical Academy

Board of Intermediate Education

2021 – 2023

OP Jindal Bharathi Vidya Mandir

Secondary School Certificate (APSSC)

2009 – 2021