

# GIRIDHAR R

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## PROFESSIONAL SUMMARY

Aspiring Software Engineer passionate about developing AI-integrated software solutions and eager to solve real world problems.

## EDUCATION

**Amrita Vishwa Vidyapeetham**, Computer Science And Engineering  
CGPA:7.53

Chennai

**CourseWork:** Data Structures and Algorithms, Object-Oriented Programming, Database Management Systems, Operating Systems, Computer Networks, Software Engineering.

## PROJECTS

**Community Driven Sustainable Development Using Data-Driven Solutions**, PRA, Stakeholder Engagement, Data Analysis(Python)

05/2025 – Present

- Conducted **field research in a North Eastern Village** engaging with **50+ community members** through participatory rural appraisal methods.
- The village data analysis revealed critical issues such as **60%** of the households without piped water, **96%** lacking waste management facilities, and frequent power outages.
- Collaborated with rural communities to design and implement data driven, technology based sustainable solutions

**Predictive Model for Bimetallic Nanoparticle Stability**, Python, Scikit-Learn, Pandas, NumPy

08/2025 – Present

- Designing a Machine Learning framework to predict the formation energy and stability of bimetallic nanoparticles(Coau), aiming to achieve high predictive accuracy  $R^2 > 0.99$ .
- Planned analysis of 156,000 DFT simulation samples and over 1,000+ structural/physicochemical features to identify critical properties influencing nanoparticle stability.
- **Goal:** To establish a **fast and practical material screening alternative** to time-consuming DFT simulations for efficient materials discovery.

**Smart Accident Detection & Notification System**, Python, OpenCV, CNN, Twilio, Geopy

01/2024

- Developed a CNN-based real-time accident detection model with **90%+** accuracy using OpenCV for video frame analysis.
- Automated **instant alerts (within 5–7 sec)** via Twilio & Geopy, reducing emergency response delays significantly.
- Enhanced reporting with **customizable geo-tagged notifications**, making it more informative than traditional systems

## SKILLS

**Programming and Core Concepts:** Python, HTML, SQL, OOPS, Computer Networks, Project Management, SDLC.

**Tools:** GitHub, VS Code, MYSQL, PRA, Google Colab, Google Antigravity.

**ML and DS:** Basic proficiency in Machine Learning (TensorFlow, Scikit-learn), Data Visualization (Matplotlib).


**Soft Skills:** Communication and Collaboration, Analytical Thinking, Problem Solving.

## PUBLICATIONS


**Title:** Community-driven Sustainable Development Through Human-Centred Design and Participatory Rural Assessment  
**Co-author**, SSRN (Elsevier) 


11/2025


## ACHIEVEMENTS AND CERTIFICATIONS

**Road Safety Hackathon**, IIT Roorkee: Achieved **2nd position** in the Accident Prediction & Prevention category  (Jan 2024)

**Mython Data Hackathon**, IIIT Sricity: Achieved **3rd place** in a data analytics hackathon. (Feb 2024)

**HacksDay Hackathon**, 0 x day: Worked on real-world problem statements and solution refinement (Dec 2024) 

**IndustriAI Hackathon**, IIT Madras: Participated and attended workshops during Shaastra 2025. (Feb 2025) 

**Live in Labs**, Amrita Vishwa Vidyapeetham, Chennai: Field Research Participant. (May 2025) 

Foundations: Data, Data, Everywhere 

Google Data Analytics Professional Certificate — Ongoing