

Role: Lead Scientist (Structures)

Experience: Applications are welcome from both recent Ph.D. graduates and those who have submitted their thesis

Location: Kozhikode, Kerala

About Airawat Research Foundation

Airawat Research Foundation (ARF) is a Section 8 company established to advance a mission of national importance leveraging AI for sustainable urban transformation. ARF serves as the institutional vehicle for the prestigious Centre of Excellence in Artificial Intelligence for Sustainable Cities, led by IIT Kanpur, under the aegis of a consortium selected by the Government of India.

As India rapidly urbanizes, cities face mounting challenges related to **air quality, water scarcity, urban governance, energy efficiency, mobility, solid waste management, and urban flooding etc.** ARF is committed to addressing these pressing issues through state-of-the-art, AI-enabled solutions that combine cutting-edge research with real-world implementation.

With a strong focus on technology-driven public service delivery, ARF collaborates with academic institutions, government stakeholders, industry partners, and civil society to develop scalable, policy-aligned innovations.

Being part of ARF means contributing to one of India's most forward-looking initiatives in the use of AI for urban sustainability. It offers a dynamic, interdisciplinary, and high-impact environment where technology meets governance, and research meets real-world change.

About the Role:

ARF is seeking a highly motivated and skilled PhD Structural Engineer to lead our R&D efforts in developing cutting-edge AI-powered solutions for civil infrastructure management. As a Lead Scientist (Structures), you will play a pivotal role in innovating a structural asset management platform, which leverages UAVs (drones) and computer vision for the efficient inspection of critical assets like bridges and dams. This is a unique opportunity to blend deep structural engineering knowledge with advanced technologies like AI and machine learning to solve real-world problems. Your work will directly impact the safety, longevity, and maintenance of civil structures, pushing the boundaries of what's possible in Structural Health Monitoring (SHM) and condition assessment.

Key Responsibilities:

1. Develop structural health indexes based on the inspection data. Understanding the behaviour of different local area defects and their effect on the global response of the structure.
2. Understanding the requirement of various auditing agencies and incorporating it in the platform.
3. Develop and validate **Finite Element Models (FEM)** to simulate structural behavior and predict deterioration.
4. Design and execute inspection protocols using **UAVs** to capture high-quality data.
5. Integrate **computer vision** and machine learning models for processing visual data from drone inspections.
6. Collaborate with software engineers to deploy research models into the main product platform.
7. Publish research findings in reputable journals and present at industry conferences.
8. Contribute to patent applications and intellectual property development.
9. Mentor junior engineers and researchers on the team.

Qualifications and Experience

A Ph.D. in Structural Engineering with a strong background in structural health monitoring/computer vision, and AI. Proven experience in finite element modelling (FEM). Must possess excellent problem-solving skills and a passion for technology.

Compensation: Commensurate with qualification, experience and market