

Not just *animal* instinct, AI to now protect MP's wildlife

State Forest Body Ties Up With IIT-Indore For Warning System

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Indore: Picture this: It's night in a forest in Madhya Pradesh, as a tigress with her cubs approaches a railway track. And at that moment, a goods train is rushing on the track heading towards the tigress. It's at this moment that a siren sets off at the nearest railway station. Within seconds, the loco pilot receives an automated warning and slows down the train, avoiding a tragedy.

This scenario, though imaginary today, could soon become reality as the Indian Institute of Technology (IIT) Indore is developing an Artificial Intelligence (AI) powered



An MoU in this connection was signed between IIT-Indore and State Forest Research Institute (SFRI), Jabalpur recently

system to detect tiger and other carnivore movements near railway tracks and roads.

The AI-enabled sensor-based monitoring and management system is being designed to raise early warnings of animal intrusions and reduce accidents in Madhya Pradesh – known as the Tiger State of India with the highest tiger population in the country. Initially, the system will be deployed along railway lines and roads passing through or near wildlife habitats. **P 6**

Real-time wildlife protection on cards

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Later, it will be expanded to residential areas, villages, and other intrusion-prone zones. The project is being developed by IIT-Indore for the State Forest Research Institute (SFRI), Jabalpur, under a recent memorandum of understanding (MoU). The aim is to mitigate risks arising from railway expansion projects and linear infrastructure activities that intersect with wildlife corridors.

"We are developing an AI-powered edge computing system using both hardware and software. It will capture images of tigers, leopards, and other big animals, analyse the visuals, and instantly send alerts to train drivers about animal presence near tracks," said Dr. Saurabh Das, Associate Professor and Head of the Department of Astronomy, Astrophysics, and Space Engineering at IIT-Indore.

The system can trace animal movements within a certain range and even suggest the likely route of travel. To ensure reliability in forested regions, it will operate on battery or solar power.

In recent years, several AI-based pilot projects in the country have shown encouraging results. In Tamil Nadu's Coimbatore region, the railways introduced an AI-based intrusion detection system to prevent elephants from being hit by trains.

According to the SFRI, expansion of railway lines through critical zones like the Satpura-Melghat wildlife



corridor, coupled with climate change and shrinking habitats, has escalated human-animal conflict. The institute hopes the early-alarm AI technology will become a game-changer in tiger conservation.

SFRI director Pradeep Vasudeva said, "Partnering with IIT-Indore will strengthen forest management in Madhya Pradesh and promote the application of modern technologies to resolve critical challenges." A team from SFRI recently visited IIT-Indore to deliberate on technical solutions.

SFRI scientist Aniruddha Majumdar emphasised that while infrastructure growth cannot be halted, "technology-driven solutions can help save tigers and other carnivores from avoidable conflicts."

The partnership marks the first such initiative where a state-level forestry research institute and a premier technical institute are working jointly on real-time wildlife protection.

IIT-Indore director Suhas Joshi said, "The collaboration will integrate research excellence, innovative solutions, and field-level implementation to create a tangible impact. TNN