



विज्ञान एवं
प्रौद्योगिकी मंत्रालय
MINISTRY OF
SCIENCE AND
TECHNOLOGY



75
Azadi Ka
Amrit Mahotsav

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Transforming the Nation with Translational Research



National Mission on
**Interdisciplinary Cyber-Physical
Systems (NM-ICPS)**



DEPARTMENT OF
SCIENCE & TECHNOLOGY
MINISTRY OF
SCIENCE & TECHNOLOGY

iHub Drishti Foundation

IIT Jodhpur

Theme: Defence

TIH
iHub Drishti



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Hub Overview:

iHub Drishti, the TIH working on Computer Vision and Augmented and Virtual Reality (CV and AR-VR), concentrates on key research domains like seeing, sensing, dependability, real-time computer vision systems, data collection, curation, and annotation.

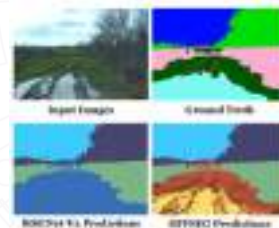
Project Updates:

Generalizing Robot Perception for Indoor and Outdoor Scenarios by Combining Spatial and Semantic Reasoning

Thematic Area : Defence

TRL Stage and Deployment Status : 8

Developed off-road deep learning methodology to determine traversable regions while avoiding obstacles and rough terrains. Several applications like agriculture, mining, and security, need the robotic vehicles to travel in regions where there is no proper road (off-road conditions). For robots to travel safely in these conditions, we need to find safe and unsafe areas for navigation autonomously. Ability to quickly



determine navigable regions is the innovation in this project.

Application area/Use Case : Defence/Security, Agriculture, mining

Socio-economic impact : Increased productivity as the robots can perform the tasks persistently.

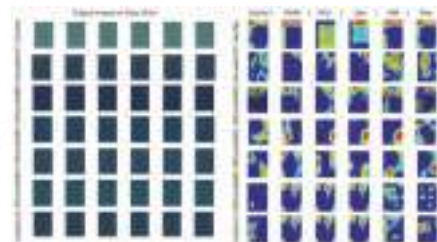
TrustMe: Explainable Adversarial Attack Detection and Mitigation for Object Recognition Algorithms

Thematic Area : Defence

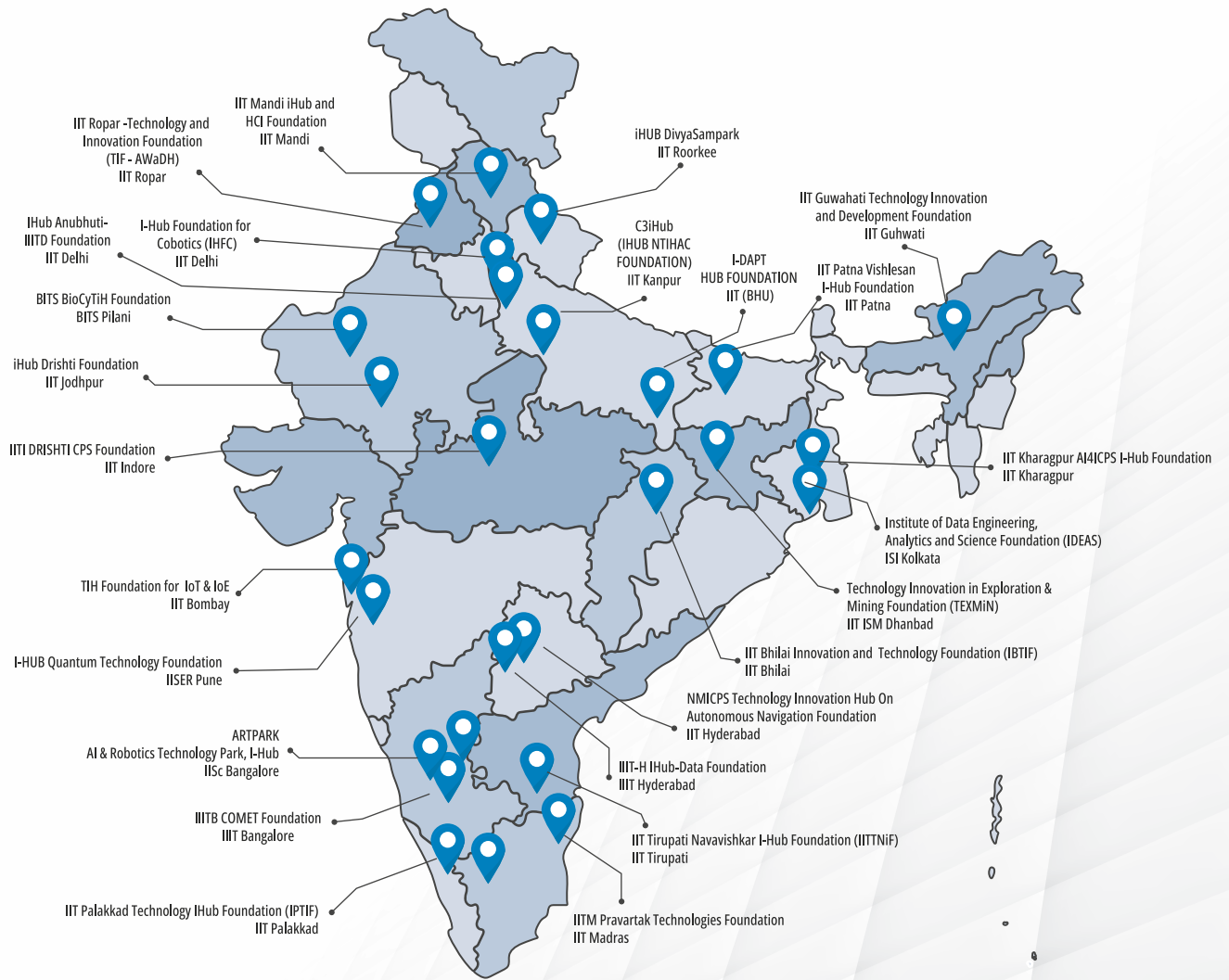
TRL Stage and Deployment Status : 3

Description : Algorithm to estimate model robustness and performance evaluation. Evaluate the performance of the attack detection algorithm. Algorithm to mitigate the effect of adversarial attack. Algorithm to estimate model explainability and performance evaluation. Helps detect maliciously perturbed images that can confuse machine learning algorithms and generalize and detect several adversarial attacks on object recognition algorithms

Application area/Use Case : Defence/Security



25 Technology Innovation Hubs Across the Country



National Mission on Interdisciplinary Cyber-physical Systems (NM-ICPS)