

Industry Problem Statements

Solve Real-World Industry Challenges. Build What Matters.

Step beyond theoretical learning and work on **real-world challenges faced by industry** across Aerospace & Defence, Banking & FinTech, Sustainable Mobility, Automotive, Climate Tech and Urban Sustainability.

This hackathon brings together students, innovators and technology enthusiasts to develop **practical, scalable and technology-driven solutions** to problems that have a direct impact on businesses, communities and society.

Category	Problem Statement	Challenge	Explore
Aerospace & Defence	Predict Aircraft Component Failures Before They Happen <i>Aircraft maintenance often relies on fixed schedules rather than the actual condition of components.</i>	Develop an intelligent solution that uses sensor and time-series data to predict potential component failures in advance, enabling proactive maintenance and reducing unplanned aircraft downtime.	AI/ML • Predictive Analytics • IoT • Time-Series Data
Aerospace & Defence	Smarter Visual Inspection of Aircraft <i>Aircraft surfaces need to be regularly inspected for dents, cracks and corrosion. Manual inspection can be time-consuming and may vary between inspectors.</i>	Build a computer-vision solution that can automatically detect, classify and document aircraft surface defects using images or drone footage.	Computer Vision • AI • Image Processing • Drones
Banking, Financial Services & FinTech	Detect Payment Fraud in Real Time <i>As digital payments grow, fraud patterns are becoming increasingly dynamic. At the same time, excessive fraud alerts can disrupt genuine customers.</i>	Develop a real-time fraud detection solution that can identify suspicious transactions while minimising false alerts for genuine customers.	Machine Learning • Fraud Analytics • APIs • Real-Time Systems
Banking, Financial Services & FinTech	Prevent Sensitive Data Leakage <i>Financial institutions handle large volumes of sensitive customer information across APIs, applications and system logs.</i>	Create a solution that can identify sensitive customer information in API traffic and application logs and automatically protect or mask it before it is stored or shared.	AI/NLP • Data Privacy • APIs • Cybersecurity • Cryptography

Sustainable Mobility & Automotive	Identify Dangerous Roads Before Accidents Happen <i>Road-safety interventions often happen after accidents have already occurred, while many near-miss incidents go unrecorded.</i>	Develop a computer-vision solution that can identify dangerous road locations by detecting near-miss events from dashcam or traffic video.	Computer Vision • Video Analytics • AI • Road Safety
Sustainable Mobility & Automotive	Give Used EV Batteries a Second Life <i>EV batteries can still have significant usable capacity even after they are no longer suitable for vehicle applications. Reliable assessment is essential for safe reuse and repurposing.</i>	Build a solution that can quickly assess the health of a used EV battery and determine whether it should be reused, repurposed or recycled.	AI/ML • Battery Analytics • EV Technology • Predictive Analytics
Climate & Urban Sustainability	Bring Air Quality Insights to Every Street <i>Many cities have limited air-quality monitoring infrastructure, making it difficult to understand pollution at a local street level. Low-cost sensors also require reliable calibration.</i>	Develop an affordable solution that can provide reliable, street-level air-quality information and timely alerts to communities.	IoT • Sensors • Machine Learning • Data Analytics
Climate & Urban Sustainability	Make Carbon Footprint Reporting Simple for Small Businesses <i>Large manufacturers increasingly need emissions data from their supply chains, while smaller suppliers often lack the tools and resources to measure their carbon footprint.</i>	Build a simple digital solution that enables small suppliers to measure and report their carbon footprint using everyday business records.	AI • OCR • LLMs • Web/App Development • Sustainability