

GVHAX

2026 | ACHARYA HACKATHON

Smart India Hackathon (SIH) Internal Selection

HACKATHON FORMAT	3-hour software sprint
PROBLEM POOL	100 SIH-aligned problem statements
DOMAINS	AIML · Computer · IoT · Cybersecurity · Blockchain
SOURCE BASIS	Problem statements adapted and structured from the provided SIH 2026 reference document

Build fast. Solve meaningfully. Demonstrate clearly.

Prepared for college-level SIH internal team selection.

GVHAX 2026 — Problem Statement Booklet

Purpose. GVHAX is a focused 3-hour internal hackathon designed to evaluate how student teams identify a real-world problem, define a practical minimum viable solution, implement a functional prototype, and communicate the value of their approach under time constraints.

How to use this booklet. Each challenge below has been rewritten into a consistent competition format while preserving the original SIH reference, problem intent, scope, and suggested technology direction from the supplied document.

3-HOUR SPRINT EXPECTATION

Teams should prioritize a demonstrable MVP over breadth. The suggested stack is a direction, not a restriction; equivalent technologies may be used where appropriate.

Domain Overview

Domain	Problem Statements	Primary Focus
AIML	20	AI / ML / NLP / Computer Vision
Computer	42	Applications / Data / Platforms / Automation
IoT	12	Simulation / Monitoring / Forecasting / Geospatial
Cybersecurity	13	Threat Detection / Forensics / Security Automation
Blockchain	13	Integrity / Traceability / Smart Contracts / Analytics

AIML

Artificial Intelligence, Machine Learning, Natural Language Processing and Computer Vision

20 problem statements are provided in this track. Select a challenge that matches your team capabilities and prioritize a working prototype with a clear user outcome.

01. Elderly Memory-Care Companion

SIH REFERENCE **SIH26003**

PROBLEM STATEMENT

A chatbot with a friendly LLM persona that engages elderly users in simple memory games, like sequence recall and short quizzes, to support cognitive engagement for dementia care.

SUGGESTED STACK LLM API + simple game state.

3-HOUR MVP DIRECTION Demonstrate the smallest end-to-end flow that proves the solution concept within the 3-hour window.

02. Explainable Diabetic Retinopathy Screener

SIH REFERENCE **SIH26038**

PROBLEM STATEMENT

Classifies retina images from a public dataset to detect signs of diabetic retinopathy, and overlays a Grad-CAM heatmap showing exactly which regions of the image drove the model's decision.

SUGGESTED STACK pre-trained CNN + Grad-CAM.

3-HOUR MVP DIRECTION Demonstrate the smallest end-to-end flow that proves the solution concept within the 3-hour window.

03. Vernacular Pedagogy Translator

SIH REFERENCE **SIH26042**

PROBLEM STATEMENT

Takes a lesson written in English, auto-translates and simplifies it into a regional language, then reads it aloud using text-to-speech so it's accessible to non-English learners.

SUGGESTED STACK LLM + TTS API.

3-HOUR MVP DIRECTION Demonstrate the smallest end-to-end flow that proves the solution concept within the 3-hour window.

04. WeatherGPT Mini

SIH REFERENCE **SIH26068**

PROBLEM STATEMENT

A conversational wrapper around a public weather API that lets someone ask plain-language questions like "should I carry an umbrella in Nagpur" and get a natural-sounding answer.

SUGGESTED STACK LLM + weather API.

3-HOUR MVP DIRECTION Demonstrate the smallest end-to-end flow that proves the solution concept within the 3-hour window.

05. Cyclone Pattern Classifier

SIH REFERENCE **SIH26070**

PROBLEM STATEMENT

Trains or demos a classifier on public cyclone-track data to bucket storms into categories by type and intensity, helping visualize historical storm patterns.

SUGGESTED STACK scikit-learn + public IMD/NOAA dataset.

3-HOUR MVP DIRECTION Demonstrate the smallest end-to-end flow that proves the solution concept within the 3-hour window.

06. Distress-Signal Text Triage

SIH REFERENCE **SIH26094**

PROBLEM STATEMENT

Classifies synthetic complaint or message text by urgency and distress level, helping case workers prioritize which messages need attention first.

SUGGESTED STACK NLP classifier, synthetic dataset only.

3-HOUR MVP DIRECTION Demonstrate the smallest end-to-end flow that proves the solution concept within the 3-hour window.

07. Quantum-Inspired Disease Risk Model

SIH REFERENCE SIH26139

PROBLEM STATEMENT

A classical ML model estimates disease risk from patient data, with one module additionally run as a toy quantum circuit for comparison, giving a demo-friendly look at quantum-inspired computing.

SUGGESTED STACK scikit-learn + Qiskit toy circuit.**3-HOUR MVP DIRECTION** Demonstrate the smallest end-to-end flow that proves the solution concept within the 3-hour window.**08. Near-Miss Report NLP Engine**

SIH REFERENCE SIH26165

PROBLEM STATEMENT

Feeds a set of synthetic "unsafe condition" incident reports into an NLP pipeline that automatically extracts recurring precursor phrases and themes, surfacing early warning signs.

SUGGESTED STACK LLM/NLP topic extraction.**3-HOUR MVP DIRECTION** Demonstrate the smallest end-to-end flow that proves the solution concept within the 3-hour window.**09. Weather Station Anomaly Spotter**

SIH REFERENCE SIH26073

PROBLEM STATEMENT

Feeds synthetic automatic weather station (AWS) sensor readings into an anomaly-detection pipeline that flags issues like a stuck sensor, a sudden spike, or gradual drift, shown live on a chart.

SUGGESTED STACK isolation forest / z-score + dashboard.**3-HOUR MVP DIRECTION** Demonstrate the smallest end-to-end flow that proves the solution concept within the 3-hour window.**10. Crop Disease Photo Triage**

SIH REFERENCE SIH26131

PROBLEM STATEMENT

Lets a farmer upload a photo of a leaf, using the PlantVillage dataset to identify the disease and return the name along with a suggested remedy card.

SUGGESTED STACK transfer-learning CNN.**3-HOUR MVP DIRECTION** Demonstrate the smallest end-to-end flow that proves the solution concept within the 3-hour window.**11. SatQuery Mini**

SIH REFERENCE SIH26167

PROBLEM STATEMENT

Lets a user ask natural-language questions about a sample satellite image, such as "how many buildings are visible," and get an answer using a vision-language model.

SUGGESTED STACK VLM API (e.g. GPT-4V/Gemini) demo.**3-HOUR MVP DIRECTION** Demonstrate the smallest end-to-end flow that proves the solution concept within the 3-hour window.**12. Fake ID Document Screener**

SIH REFERENCE SIH26188

PROBLEM STATEMENT

Lets a user upload a sample ID image, then runs OCR plus rule checks on font consistency and field formatting to flag documents that look likely to be forged.

SUGGESTED STACK OCR (Tesseract) + rule engine.**3-HOUR MVP DIRECTION** Demonstrate the smallest end-to-end flow that proves the solution concept within the 3-hour window.**13. Land-Acquisition Delay Predictor**

SIH REFERENCE SIH26017

PROBLEM STATEMENT

A regression or classification model trained on synthetic case data that predicts which land-acquisition cases are likely to slip past deadline, and by roughly how long.

SUGGESTED STACK scikit-learn + dashboard.**3-HOUR MVP DIRECTION** Demonstrate the smallest end-to-end flow that proves the solution concept within the 3-hour window.

14. Onion Quality Grader

SIH REFERENCE SIH26031

PROBLEM STATEMENT

Classifies sample onion images into quality grades based on size, blemishes, and rot, useful for automating grading during procurement.

SUGGESTED STACK transfer-learning CNN.

3-HOUR MVP DIRECTION Demonstrate the smallest end-to-end flow that proves the solution concept within the 3-hour window.

15. IP-SAKTI RAG Assistant

SIH REFERENCE SIH26045

PROBLEM STATEMENT

A retrieval-augmented Q&A chatbot that answers questions by searching a sample set of IP/patent policy documents and grounding its answers in the retrieved text.

SUGGESTED STACK LLM + vector DB (RAG).

3-HOUR MVP DIRECTION Demonstrate the smallest end-to-end flow that proves the solution concept within the 3-hour window.

16. Monsoon Post-Processing Model

SIH REFERENCE SIH26080

PROBLEM STATEMENT

Takes raw public numerical weather prediction (NWP) output alongside observed rainfall data and trains a bias-correction model that improves forecast accuracy.

SUGGESTED STACK scikit-learn + public dataset.

3-HOUR MVP DIRECTION Demonstrate the smallest end-to-end flow that proves the solution concept within the 3-hour window.

17. UGV Vision Navigation Demo

SIH REFERENCE SIH26126

PROBLEM STATEMENT

Runs lane and obstacle detection on sample dashcam-style video footage to simulate how an unmanned ground vehicle would perceive its surroundings, with no physical vehicle needed.

SUGGESTED STACK OpenCV + pre-trained detection model.

3-HOUR MVP DIRECTION Demonstrate the smallest end-to-end flow that proves the solution concept within the 3-hour window.

18. Satellite Oil-Spill Detector

SIH REFERENCE SIH26143

PROBLEM STATEMENT

Classifies patches of sample satellite imagery as spill or no-spill, helping automate early detection of marine oil spills.

SUGGESTED STACK CNN on public SAR/optical dataset.

3-HOUR MVP DIRECTION Demonstrate the smallest end-to-end flow that proves the solution concept within the 3-hour window.

19. Human Activity Recognition

SIH REFERENCE SIH26174

PROBLEM STATEMENT

Classifies activity type, such as walking, running, falling, or idle, from a sample motion-sensor CSV or annotated video clip.

SUGGESTED STACK scikit-learn/CNN on public HAR dataset.

3-HOUR MVP DIRECTION Demonstrate the smallest end-to-end flow that proves the solution concept within the 3-hour window.

20. Border Surveillance Video Analytics

SIH REFERENCE SIH26187

PROBLEM STATEMENT

Runs object and anomaly detection on sample surveillance footage to flag unusual movement patterns that might warrant a closer look.

SUGGESTED STACK pre-trained object-detection model + rule layer.

3-HOUR MVP DIRECTION Demonstrate the smallest end-to-end flow that proves the solution concept within the 3-hour window.

Computer

Software Platforms, Data Applications, Workflow Systems and Developer Solutions

42 problem statements are provided in this track. Select a challenge that matches your team capabilities and prioritize a working prototype with a clear user outcome.

01. Land Acquisition Status Tracker

SIH REFERENCE **SIH26016**

PROBLEM STATEMENT

A CRUD app that logs each land-parcel case, its current stage, and how long it's been stuck there. The dashboard highlights which stage has the most bottlenecked cases so officials can see where delays pile up.

SUGGESTED STACK any **CRUD stack (Flask/Django/Express + DB).**

3-HOUR MVP DIRECTION Demonstrate the smallest end-to-end flow that proves the solution concept within the 3-hour window.

02. Train ETA Predictor

SIH REFERENCE **SIH26028**

PROBLEM STATEMENT

Uses a regression model trained on synthetic schedule and delay data to predict a train's arrival time at each station. The dashboard shows predicted vs scheduled arrival side by side so the gap is easy to spot.

SUGGESTED STACK **scikit-learn + dashboard.**

3-HOUR MVP DIRECTION Demonstrate the smallest end-to-end flow that proves the solution concept within the 3-hour window.

03. Societal Challenge Crowdsourcing Board

SIH REFERENCE **SIH26043**

PROBLEM STATEMENT

A civic-tech style board where anyone can post a local problem, and others upvote, comment, or propose solutions to it, similar to a mini Reddit for community issues.

SUGGESTED STACK **full-stack CRUD app.**

3-HOUR MVP DIRECTION Demonstrate the smallest end-to-end flow that proves the solution concept within the 3-hour window.

04. Capacity Connect Mini-LMS

SIH REFERENCE **SIH26075**

PROBLEM STATEMENT

A lightweight learning platform with a course list, an auto-generated quiz from any uploaded text, and a per-learner progress tracker.

SUGGESTED STACK **full-stack app + LLM for quiz generation.**

3-HOUR MVP DIRECTION Demonstrate the smallest end-to-end flow that proves the solution concept within the 3-hour window.

05. Cooperative Gig Marketplace

SIH REFERENCE **SIH26089**

PROBLEM STATEMENT

Lets someone post a household or community service request, lets others browse and accept those gigs, and includes a simple rating system afterward.

SUGGESTED STACK **full-stack marketplace app.**

3-HOUR MVP DIRECTION Demonstrate the smallest end-to-end flow that proves the solution concept within the 3-hour window.

06. Infra Project Monitoring Dashboard

SIH REFERENCE **SIH26103**

PROBLEM STATEMENT

Takes a mock list of infrastructure projects with planned vs actual milestones, automatically flags delays, and shows progress in a Gantt-style timeline view.

SUGGESTED STACK **dashboard + mock dataset.**

3-HOUR MVP DIRECTION Demonstrate the smallest end-to-end flow that proves the solution concept within the 3-hour window.

07. Mixed-Use Floor Plan Validator

SIH REFERENCE SIH26116

PROBLEM STATEMENT

A simple 2D grid-based sketch tool for floor plans that checks basic building constraints like setbacks and parking ratios as you draw.

SUGGESTED STACK canvas/SVG editor + rule checks.**3-HOUR MVP DIRECTION** Demonstrate the smallest end-to-end flow that proves the solution concept within the 3-hour window.**08. Plan-to-Execution Progress Bridge**

SIH REFERENCE SIH26122

PROBLEM STATEMENT

Takes a project schedule as a CSV plus daily actuals, then automatically computes the variance between plan and reality and flags tasks that are at risk.

SUGGESTED STACK Python/pandas + dashboard.**3-HOUR MVP DIRECTION** Demonstrate the smallest end-to-end flow that proves the solution concept within the 3-hour window.**09. Industrial Approval Workflow Tool**

SIH REFERENCE SIH26130

PROBLEM STATEMENT

Models a multi-step approval chain (applicant to department A to department B to final approval), tracking status at each hop and flagging any SLA breaches.

SUGGESTED STACK workflow/state-machine app.**3-HOUR MVP DIRECTION** Demonstrate the smallest end-to-end flow that proves the solution concept within the 3-hour window.**10. Skill-to-Job Matching Engine**

SIH REFERENCE SIH26134

PROBLEM STATEMENT

Given a resume or skills list alongside a mock set of job postings, ranks the best-fit matches using a similarity score so candidates see relevant openings first.

SUGGESTED STACK TF-IDF/embeddings + ranking.**3-HOUR MVP DIRECTION** Demonstrate the smallest end-to-end flow that proves the solution concept within the 3-hour window.**11. Skilling Outcome Analytics Dashboard**

SIH REFERENCE SIH26135

PROBLEM STATEMENT

Takes a mock dataset of trainees and shows completion rates, placement rates, and a heatmap of skill gaps across cohorts.

SUGGESTED STACK dashboard + pandas.**3-HOUR MVP DIRECTION** Demonstrate the smallest end-to-end flow that proves the solution concept within the 3-hour window.**12. Secure Document Vault**

SIH REFERENCE SIH26190

PROBLEM STATEMENT

Lets users upload, tag, and set role-based access controls on documents, with a full audit log tracking who viewed or downloaded what and when.

SUGGESTED STACK full-stack app + RBAC.**3-HOUR MVP DIRECTION** Demonstrate the smallest end-to-end flow that proves the solution concept within the 3-hour window.**13. Smart Logistics Coordination Platform**

SIH REFERENCE SIH26002

PROBLEM STATEMENT

Given mock shipment and vehicle data, builds a dispatch dashboard that assigns deliveries to vehicles and tracks them through to completion.

SUGGESTED STACK full-stack app + simple assignment algorithm.**3-HOUR MVP DIRECTION** Demonstrate the smallest end-to-end flow that proves the solution concept within the 3-hour window.

14. Freight Demand Forecast DashboardSIH REFERENCE **SIH26006****PROBLEM STATEMENT**

Uses public or synthetic freight-volume data to produce a short-term demand forecast chart broken down by route.

SUGGESTED STACK **pandas + forecasting model + dashboard.**

3-HOUR MVP DIRECTION Demonstrate the smallest end-to-end flow that proves the solution concept within the 3-hour window.

15. 3D ULPIN Parcel GeneratorSIH REFERENCE **SIH26011****PROBLEM STATEMENT**

Given a set of plot coordinates, auto-generates a simplified 3D visualization of the parcel boundary along with its unique land parcel ID.

SUGGESTED STACK **geometry library (Three.js/Shapely) demo.**

3-HOUR MVP DIRECTION Demonstrate the smallest end-to-end flow that proves the solution concept within the 3-hour window.

16. Drone-Imagery Parcel MapperSIH REFERENCE **SIH26012****PROBLEM STATEMENT**

Uses sample static drone or aerial images (no live drone needed) to auto-detect and map out urban land parcels through image segmentation.

SUGGESTED STACK **image segmentation on provided imagery.**

3-HOUR MVP DIRECTION Demonstrate the smallest end-to-end flow that proves the solution concept within the 3-hour window.

17. Multi-Source Geospatial HarmonizerSIH REFERENCE **SIH26013****PROBLEM STATEMENT**

Merges two or three sample geospatial datasets that use different formats or projections into a single unified map layer.

SUGGESTED STACK **GeoPandas/QGIS-style processing.**

3-HOUR MVP DIRECTION Demonstrate the smallest end-to-end flow that proves the solution concept within the 3-hour window.

18. Mini GIS Land Governance PortalSIH REFERENCE **SIH26014****PROBLEM STATEMENT**

A searchable, filterable map view of mock land parcels showing ownership and status information for each one.

SUGGESTED STACK **Leaflet/Mapbox + backend.**

3-HOUR MVP DIRECTION Demonstrate the smallest end-to-end flow that proves the solution concept within the 3-hour window.

19. Land Record DigitizerSIH REFERENCE **SIH26018****PROBLEM STATEMENT**

Runs OCR on a sample scanned land record to extract key fields automatically and store them as a structured database entry.

SUGGESTED STACK **Tesseract OCR + field extraction.**

3-HOUR MVP DIRECTION Demonstrate the smallest end-to-end flow that proves the solution concept within the 3-hour window.

20. Coal Mine Governance DashboardSIH REFERENCE **SIH26024****PROBLEM STATEMENT**

Takes mock compliance and safety data per mine site and builds a dashboard that flags overdue inspections and outstanding violations.

SUGGESTED STACK **dashboard + mock dataset.**

3-HOUR MVP DIRECTION Demonstrate the smallest end-to-end flow that proves the solution concept within the 3-hour window.

21. Farmer Procurement Queue TrackerSIH REFERENCE **SIH26032****PROBLEM STATEMENT**

A digital token and queue system that shows live estimated wait times for farmers at a mock procurement center.

SUGGESTED STACK **queue-management web app.**

3-HOUR MVP DIRECTION Demonstrate the smallest end-to-end flow that proves the solution concept within the 3-hour window.

22. Direct Farmer Marketplace

SIH REFERENCE SIH26033

PROBLEM STATEMENT

Lets farmers list produce directly to buyers, cutting out the mock "intermediary" markup, with transparent pricing shown to both sides.

SUGGESTED STACK full-stack marketplace app.

3-HOUR MVP DIRECTION Demonstrate the smallest end-to-end flow that proves the solution concept within the 3-hour window.

23. Packaged Commodity Compliance Checker

SIH REFERENCE SIH26034

PROBLEM STATEMENT

Takes an uploaded product label image or text and automatically checks it against a packaging-rule checklist covering things like MRP and net quantity.

SUGGESTED STACK OCR + rule engine.

3-HOUR MVP DIRECTION Demonstrate the smallest end-to-end flow that proves the solution concept within the 3-hour window.

24. NAWI Test-Report Generator

SIH REFERENCE SIH26035

PROBLEM STATEMENT

Lets an operator enter weighing-instrument test readings and auto-generates a formatted compliance report or certificate from them.

SUGGESTED STACK form app + PDF generation.

3-HOUR MVP DIRECTION Demonstrate the smallest end-to-end flow that proves the solution concept within the 3-hour window.

25. Weighing-Instrument Verification Portal

SIH REFERENCE SIH26036

PROBLEM STATEMENT

Registers instruments, logs each verification check performed on them, and tracks which ones are due for recheck.

SUGGESTED STACK CRUD app + reminders.

3-HOUR MVP DIRECTION Demonstrate the smallest end-to-end flow that proves the solution concept within the 3-hour window.

26. Web-Based Vocational Trainer

SIH REFERENCE SIH26041

PROBLEM STATEMENT

A step-by-step interactive simulator that walks a learner through a trade skill, such as wiring or plumbing, entirely through a web UI instead of AR/VR hardware.

SUGGESTED STACK interactive web walkthrough (HTML/JS).

3-HOUR MVP DIRECTION Demonstrate the smallest end-to-end flow that proves the solution concept within the 3-hour window.

27. Academia-Industry Collaboration Portal

SIH REFERENCE SIH26044

PROBLEM STATEMENT

Industry partners post research problems, students browse and apply to work on them, and the portal tracks collaboration status through to completion.

SUGGESTED STACK full-stack portal.

3-HOUR MVP DIRECTION Demonstrate the smallest end-to-end flow that proves the solution concept within the 3-hour window.

28. Clinical Trials Dashboard

SIH REFERENCE SIH26046

PROBLEM STATEMENT

Takes mock trial-phase data and builds a dashboard tracking enrollment numbers, adverse events, and upcoming milestones for each trial.

SUGGESTED STACK dashboard + mock dataset.

3-HOUR MVP DIRECTION Demonstrate the smallest end-to-end flow that proves the solution concept within the 3-hour window.

29. Digital Patient Case-Taking App

SIH REFERENCE SIH26047

PROBLEM STATEMENT

A structured digital form that replaces paper case sheets and automatically flags any missing critical fields before submission.

SUGGESTED STACK form-driven web app.

3-HOUR MVP DIRECTION Demonstrate the smallest end-to-end flow that proves the solution concept within the 3-hour window.

30. Shelter Thermal Comfort Simulator

SIH REFERENCE SIH26051

PROBLEM STATEMENT

A simple physics-based model that estimates indoor temperature and comfort level given inputs like shelter material and local climate.

SUGGESTED STACK Python physics model + chart.

3-HOUR MVP DIRECTION Demonstrate the smallest end-to-end flow that proves the solution concept within the 3-hour window.

31. Aero Engine Digital Twin (mini)

SIH REFERENCE SIH26054

PROBLEM STATEMENT

Feeds a sample sensor-log CSV for a piston engine into a simplified state model and visualizes the engine's simulated health trend over time.

SUGGESTED STACK simulation script + dashboard.

3-HOUR MVP DIRECTION Demonstrate the smallest end-to-end flow that proves the solution concept within the 3-hour window.

32. Airfare Price Index Tracker

SIH REFERENCE SIH26056

PROBLEM STATEMENT

Uses sample or scraped fare data across multiple routes to compute and chart a price index trend over time.

SUGGESTED STACK pandas + charting.

3-HOUR MVP DIRECTION Demonstrate the smallest end-to-end flow that proves the solution concept within the 3-hour window.

33. 3D Ocean Data Visualizer

SIH REFERENCE SIH26067

PROBLEM STATEMENT

Loads a sample subsurface temperature and salinity dataset and renders it as an interactive 3D visualization.

SUGGESTED STACK Three.js/Plotly 3D.

3-HOUR MVP DIRECTION Demonstrate the smallest end-to-end flow that proves the solution concept within the 3-hour window.

34. Weather Big-Data Analytics Dashboard

SIH REFERENCE SIH26069

PROBLEM STATEMENT

Uses a public historical weather dataset to build a dashboard showing long-term trends, anomalies, and comparisons across regions.

SUGGESTED STACK pandas + dashboard.

3-HOUR MVP DIRECTION Demonstrate the smallest end-to-end flow that proves the solution concept within the 3-hour window.

35. Mausam App Homepage Redesign

SIH REFERENCE SIH26076

PROBLEM STATEMENT

Rebuilds a cleaner, faster homepage prototype for a weather app, pulling live data from a sample public weather API.

SUGGESTED STACK frontend redesign (React) + public weather API.

3-HOUR MVP DIRECTION Demonstrate the smallest end-to-end flow that proves the solution concept within the 3-hour window.

36. Extreme Weather Event Tracker

SIH REFERENCE SIH26078

PROBLEM STATEMENT

Uses a public event dataset to show a map and timeline view of extreme weather occurrences across a region over a given period.

SUGGESTED STACK dashboard + public dataset.

3-HOUR MVP DIRECTION Demonstrate the smallest end-to-end flow that proves the solution concept within the 3-hour window.

37. Forecast-Bust Detector

SIH REFERENCE SIH26079

PROBLEM STATEMENT

Compares sample forecast data against actual observed weather and automatically flags the days where the forecast missed badly.

SUGGESTED STACK pandas comparison + dashboard.

3-HOUR MVP DIRECTION Demonstrate the smallest end-to-end flow that proves the solution concept within the 3-hour window.

38. Hyper-Local Business Advisory Tool

SIH REFERENCE SIH26091

PROBLEM STATEMENT

Given a business type and location, suggests tailored advisory tips using mock local demographic and market data.

SUGGESTED STACK rule engine or LLM + mock dataset.

3-HOUR MVP DIRECTION Demonstrate the smallest end-to-end flow that proves the solution concept within the 3-hour window.

39. Material Codes Standardizer

SIH REFERENCE SIH26099

PROBLEM STATEMENT

Takes an uploaded, messy materials list and auto-matches or standardizes each entry against a reference code catalog.

SUGGESTED STACK fuzzy matching (e.g. RapidFuzz) + reference dataset.

3-HOUR MVP DIRECTION Demonstrate the smallest end-to-end flow that proves the solution concept within the 3-hour window.

40. iGOT-Style Mini Learning Platform

SIH REFERENCE SIH26101

PROBLEM STATEMENT

A course catalog with video/reading tracking, quizzes, and a certificate generated automatically on course completion.

SUGGESTED STACK full-stack LMS.

3-HOUR MVP DIRECTION Demonstrate the smallest end-to-end flow that proves the solution concept within the 3-hour window.

41. BIS Intelligent Assistant

SIH REFERENCE SIH26107

PROBLEM STATEMENT

A chatbot that answers questions about a sample set of Indian Standards documents by searching and summarizing relevant sections.

SUGGESTED STACK LLM + document search.

3-HOUR MVP DIRECTION Demonstrate the smallest end-to-end flow that proves the solution concept within the 3-hour window.

42. Standards Recommendation Engine

SIH REFERENCE SIH26108

PROBLEM STATEMENT

Given a product category, recommends the relevant applicable Indian Standards by matching against a mock standards catalog.

SUGGESTED STACK similarity/recommendation model.

3-HOUR MVP DIRECTION Demonstrate the smallest end-to-end flow that proves the solution concept within the 3-hour window.

IoT

Simulated IoT Data, Monitoring, Forecasting and Geospatial Decision Support

12 problem statements are provided in this track. Select a challenge that matches your team capabilities and prioritize a working prototype with a clear user outcome.

01. Landslide Early-Warning SimulatorSIH REFERENCE **SIH26001****PROBLEM STATEMENT**

A synthetic data generator streams rainfall and slope-movement readings into a live dashboard that computes a running risk score and triggers alerts once it crosses set thresholds.

SUGGESTED STACK data generator script + WebSocket dashboard.

3-HOUR MVP DIRECTION Demonstrate the smallest end-to-end flow that proves the solution concept within the 3-hour window.

02. Marine Debris SpotterSIH REFERENCE **SIH26057****PROBLEM STATEMENT**

Runs object detection on sample sonar or underwater imagery to automatically highlight objects that look like debris, helping speed up manual review.

SUGGESTED STACK pre-trained object-detection model.

3-HOUR MVP DIRECTION Demonstrate the smallest end-to-end flow that proves the solution concept within the 3-hour window.

03. Air Pollution–Weather Coupled ForecastSIH REFERENCE **SIH26082****PROBLEM STATEMENT**

Pulls live public AQI and weather API data for a city and combines them into a short-term coupled forecast chart, showing how weather conditions are likely to affect pollution levels.

SUGGESTED STACK public APIs + simple forecasting model.

3-HOUR MVP DIRECTION Demonstrate the smallest end-to-end flow that proves the solution concept within the 3-hour window.

04. Heatwave Early-Warning IndexSIH REFERENCE **SIH26083****PROBLEM STATEMENT**

Uses public temperature and humidity data to compute a heat-stress index, then displays it as a colour-coded alert map so at-risk areas stand out immediately.

SUGGESTED STACK public weather API + index formula.

3-HOUR MVP DIRECTION Demonstrate the smallest end-to-end flow that proves the solution concept within the 3-hour window.

05. Urban Flood NowcastingSIH REFERENCE **SIH26085****PROBLEM STATEMENT**

Combines synthetic drainage-capacity data with rainfall-intensity data to generate a flood-risk map broken down by city zone, useful for short-term flood warnings.

SUGGESTED STACK synthetic data + geospatial dashboard.

3-HOUR MVP DIRECTION Demonstrate the smallest end-to-end flow that proves the solution concept within the 3-hour window.

06. Hyperlocal Monsoon Onset PredictorSIH REFERENCE **SIH26086****PROBLEM STATEMENT**

Uses a public rainfall dataset and interpolates it down to village or block-level granularity to predict when the monsoon is likely to arrive in a specific area.

SUGGESTED STACK pandas + simple interpolation model.

3-HOUR MVP DIRECTION Demonstrate the smallest end-to-end flow that proves the solution concept within the 3-hour window.

07. Dam-Break Flood SimulatorSIH REFERENCE **SIH26161****PROBLEM STATEMENT**

A simplified 2D simulation that animates how floodwater would spread across a toy river grid given a breach point in a dam, visualized cell by cell.

SUGGESTED STACK cellular-automaton style simulation + canvas visualization.

3-HOUR MVP DIRECTION Demonstrate the smallest end-to-end flow that proves the solution concept within the 3-hour window.

08. Live Industrial Fire Tracker

SIH REFERENCE SIH26162

PROBLEM STATEMENT

Pulls data from NASA's public FIRMS fire-detection API and plots live thermal hotspots on a map, useful for tracking industrial or wildfire incidents in near real time.

SUGGESTED STACK public API + map visualization.

3-HOUR MVP DIRECTION Demonstrate the smallest end-to-end flow that proves the solution concept within the 3-hour window.

09. Flash Flood Multi-Source Alert System

SIH REFERENCE SIH26192

PROBLEM STATEMENT

Fuses synthetic rain-gauge, river-level, and soil-moisture data streams into a single composite alert score, giving a more reliable early warning than any one signal alone.

SUGGESTED STACK data fusion script + dashboard.

3-HOUR MVP DIRECTION Demonstrate the smallest end-to-end flow that proves the solution concept within the 3-hour window.

10. Iceberg Trajectory Tracker

SIH REFERENCE SIH26059

PROBLEM STATEMENT

Uses a public sea-ice dataset and a simple extrapolation model to estimate and plot the likely drift trajectory of icebergs on a map.

SUGGESTED STACK public dataset + trajectory model.

3-HOUR MVP DIRECTION Demonstrate the smallest end-to-end flow that proves the solution concept within the 3-hour window.

11. Heavy Rainfall Inundation Predictor

SIH REFERENCE SIH26071

PROBLEM STATEMENT

Uses sample rainfall or radar data to identify inundation-risk zones on a map, tiered by warning severity so responders can prioritize the worst-hit areas first.

SUGGESTED STACK synthetic/sample data + geospatial visualization.

3-HOUR MVP DIRECTION Demonstrate the smallest end-to-end flow that proves the solution concept within the 3-hour window.

12. Block-to-Panchayat Weather Downscaler

SIH REFERENCE SIH26074

PROBLEM STATEMENT

Takes coarse-grid regional forecast data and disaggregates it down to village-level estimates using spatial interpolation, making forecasts more locally useful.

SUGGESTED STACK pandas + spatial interpolation.

3-HOUR MVP DIRECTION Demonstrate the smallest end-to-end flow that proves the solution concept within the 3-hour window.

Cybersecurity

Security Monitoring, Digital Forensics, Detection, Compliance and Threat Analysis

13 problem statements are provided in this track. Select a challenge that matches your team capabilities and prioritize a working prototype with a clear user outcome.

01. Scam-Call Transcript Classifier

SIH REFERENCE SIH26104

PROBLEM STATEMENT

Lets you paste in a call transcript and automatically flags social-engineering red flags like a false sense of urgency, unusual payment requests, or someone falsely claiming authority.

SUGGESTED STACK LLM few-shot or NLP classifier.

3-HOUR MVP DIRECTION Demonstrate the smallest end-to-end flow that proves the solution concept within the 3-hour window.

02. Cyber Risk Score DashboardSIH REFERENCE **SIH26105****PROBLEM STATEMENT**

Takes a mock vulnerability CSV and computes a weighted dollar-value risk-exposure score per asset, with a built-in "what if you patch X" simulator to see how fixing one issue changes overall risk.

SUGGESTED STACK Python scoring model + dashboard.

3-HOUR MVP DIRECTION Demonstrate the smallest end-to-end flow that proves the solution concept within the 3-hour window.

03. Email Forensic Trace ToolSIH REFERENCE **SIH26106****PROBLEM STATEMENT**

Parses the raw headers of an .eml file, checks SPF, DKIM, and DMARC authentication results, and geolocates the originating IP address to help verify whether an email is legitimate.

SUGGESTED STACK Python email/header parser + IP geolocation API.

3-HOUR MVP DIRECTION Demonstrate the smallest end-to-end flow that proves the solution concept within the 3-hour window.

04. Unidirectional Traffic Threat DetectorSIH REFERENCE **SIH26145****PROBLEM STATEMENT**

Feeds a synthetic packet-log CSV into an anomaly-detection pipeline that flags suspicious one-way traffic flows, a pattern often associated with data exfiltration.

SUGGESTED STACK isolation forest / rule engine.

3-HOUR MVP DIRECTION Demonstrate the smallest end-to-end flow that proves the solution concept within the 3-hour window.

05. Suspicious Bitcoin Flow MonitorSIH REFERENCE **SIH26146****PROBLEM STATEMENT**

Pulls sample data from a public blockchain explorer and flags wallets showing rapid-fanout transactions or mixer-like patterns commonly associated with laundering.

SUGGESTED STACK public blockchain API + pattern rules.

3-HOUR MVP DIRECTION Demonstrate the smallest end-to-end flow that proves the solution concept within the 3-hour window.

06. Mini Forensic Query LanguageSIH REFERENCE **SIH26148****PROBLEM STATEMENT**

Builds a small domain-specific language and interpreter that lets an investigator query a sample log file in plain syntax, like "show all failed logins after 2am."

SUGGESTED STACK simple parser/interpreter.

3-HOUR MVP DIRECTION Demonstrate the smallest end-to-end flow that proves the solution concept within the 3-hour window.

07. File Carving Demo ToolSIH REFERENCE **SIH26149****PROBLEM STATEMENT**

Recovers deleted or fragmented files from a sample corrupted disk image by scanning for known file signatures, a core technique used in digital forensics.

SUGGESTED STACK Python file-signature scanner.

3-HOUR MVP DIRECTION Demonstrate the smallest end-to-end flow that proves the solution concept within the 3-hour window.

08. DVR Metadata NormalizerSIH REFERENCE **SIH26150****PROBLEM STATEMENT**

Parses two or three different proprietary DVR/NVR video-metadata formats and converts them into one standardized report, making cross-vendor forensic analysis easier.

SUGGESTED STACK custom parsers + normalization schema.

3-HOUR MVP DIRECTION Demonstrate the smallest end-to-end flow that proves the solution concept within the 3-hour window.

09. Dark-Web Actor Correlation Demo

SIH REFERENCE SIH26151

PROBLEM STATEMENT

Takes a mock dataset of pseudonymous posts and usernames and correlates likely-linked accounts using writing-style analysis and graph-based features.

SUGGESTED STACK graph analysis (networkx) + text similarity.

3-HOUR MVP DIRECTION Demonstrate the smallest end-to-end flow that proves the solution concept within the 3-hour window.

10. Config Compliance Auditor

SIH REFERENCE SIH26155

PROBLEM STATEMENT

Parses sample firewall or router configuration files and checks them against a security compliance checklist, producing a clear pass/fail report for each rule.

SUGGESTED STACK config parser + rule engine.

3-HOUR MVP DIRECTION Demonstrate the smallest end-to-end flow that proves the solution concept within the 3-hour window.

11. Universal Log Normalizer

SIH REFERENCE SIH26156

PROBLEM STATEMENT

Accepts log samples in syslog, JSON, or CSV format, normalizes them all into a single common schema, and presents them in a searchable table UI.

SUGGESTED STACK Python parsers + SQLite + search UI.

3-HOUR MVP DIRECTION Demonstrate the smallest end-to-end flow that proves the solution concept within the 3-hour window.

12. Mini App Security Auditor

SIH REFERENCE SIH26163

PROBLEM STATEMENT

Runs a sample web app or its configuration through basic static security checks, such as open ports, default credentials, and missing security headers, and outputs a findings report.

SUGGESTED STACK static-analysis script + checklist report.

3-HOUR MVP DIRECTION Demonstrate the smallest end-to-end flow that proves the solution concept within the 3-hour window.

13. SecureMailScope

SIH REFERENCE SIH26159

PROBLEM STATEMENT

Scans a domain's public email-security configuration, checking things like TLS support, certificate strength, and cryptographic protocol posture, then produces a plain-language report on where the mail setup is weak.

SUGGESTED STACK Python (SSL/TLS libraries) + DNS lookups + report generator.

3-HOUR MVP DIRECTION Demonstrate the smallest end-to-end flow that proves the solution concept within the 3-hour window.

Blockchain

Tamper-Evident Records, Traceability, Smart Contracts and Blockchain Analytics

13 problem statements are provided in this track. Select a challenge that matches your team capabilities and prioritize a working prototype with a clear user outcome.

01. Land Record Hash-Chain

SIH REFERENCE SIH26019

PROBLEM STATEMENT

Each land-record entry is hashed and chained together, either locally or on a testnet, so that any unauthorized edit to a past record becomes immediately and provably detectable.

SUGGESTED STACK Python hash-chain or Solidity + Hardhat.

3-HOUR MVP DIRECTION Demonstrate the smallest end-to-end flow that proves the solution concept within the 3-hour window.

02. Honey Chain Traceability

SIH REFERENCE SIH26021

PROBLEM STATEMENT

Tracks a honey batch as it moves from farmer to processor to retailer, recording each handoff on a hash-chain, with a QR code lookup that shows the full custody history to buyers.

SUGGESTED STACK hash-chain/local testnet + QR library.

3-HOUR MVP DIRECTION Demonstrate the smallest end-to-end flow that proves the solution concept within the 3-hour window.

03. Artisan Provenance Catalog

SIH REFERENCE SIH26090

PROBLEM STATEMENT

A product listing app where each handcrafted item's origin and every handoff it goes through are recorded immutably, letting buyers scan a code to verify the item's authenticity.

SUGGESTED STACK hash-chain + web catalog.

3-HOUR MVP DIRECTION Demonstrate the smallest end-to-end flow that proves the solution concept within the 3-hour window.

04. GeM Bid Auto-Verifier

SIH REFERENCE SIH26100

PROBLEM STATEMENT

A smart contract encodes procurement eligibility rules, such as turnover thresholds and category requirements, so mock bids submitted to it are automatically approved or rejected without manual review.

SUGGESTED STACK Solidity + Hardhat local.

3-HOUR MVP DIRECTION Demonstrate the smallest end-to-end flow that proves the solution concept within the 3-hour window.

05. MPLAD Fund Anomaly Ledger

SIH REFERENCE SIH26102

PROBLEM STATEMENT

Records a mock fund-allocation history on-chain, then runs anomaly detection over the transaction history to flag disbursements that look irregular or out of pattern.

SUGGESTED STACK hash-chain + anomaly-detection script.

3-HOUR MVP DIRECTION Demonstrate the smallest end-to-end flow that proves the solution concept within the 3-hour window.

06. Blockchain Identity & Access Demo

SIH REFERENCE SIH26125

PROBLEM STATEMENT

Issues a digital credential to a wallet, then verifies that credential against the chain before granting mock "access" to a resource, demonstrating decentralized identity verification.

SUGGESTED STACK Solidity + ethers.js + React.

3-HOUR MVP DIRECTION Demonstrate the smallest end-to-end flow that proves the solution concept within the 3-hour window.

07. Milestone-Based Startup Procurement

SIH REFERENCE SIH26136

PROBLEM STATEMENT

A smart contract holds mock payment in escrow and only releases it once a milestone has been marked complete and confirmed by both the startup and the buyer.

SUGGESTED STACK Solidity escrow contract.

3-HOUR MVP DIRECTION Demonstrate the smallest end-to-end flow that proves the solution concept within the 3-hour window.

08. PQC Signature Demo

SIH REFERENCE SIH26141

PROBLEM STATEMENT

Demonstrates a post-quantum-style cryptographic signature scheme verifying a document, shown side by side with a classical RSA or ECDSA signature to illustrate the difference.

SUGGESTED STACK Python crypto library (e.g. liboqs bindings) demo.

3-HOUR MVP DIRECTION Demonstrate the smallest end-to-end flow that proves the solution concept within the 3-hour window.

09. Wallet-to-Exchange AttributionSIH REFERENCE **SIH26182****PROBLEM STATEMENT**

Uses a public blockchain-explorer API to cluster related cryptocurrency wallets together and tag each cluster with the nearest known exchange address, aiding in tracing fund flows.

SUGGESTED STACK public API + clustering heuristic.

3-HOUR MVP DIRECTION Demonstrate the smallest end-to-end flow that proves the solution concept within the 3-hour window.

10. Victim-Report Wallet TracerSIH REFERENCE **SIH26183****PROBLEM STATEMENT**

Given a mock "suspect wallet" address pulled from a victim's complaint, traces its transaction graph outward to flag the most likely cash-out points used by the scammer.

SUGGESTED STACK public blockchain API + graph traversal.

3-HOUR MVP DIRECTION Demonstrate the smallest end-to-end flow that proves the solution concept within the 3-hour window.

11. Cash-Withdrawal Hotspot PredictorSIH REFERENCE **SIH26184****PROBLEM STATEMENT**

Uses mock geo-tagged cybercrime complaint data to predict and plot likely cash-withdrawal hotspots on a map, helping investigators focus resources.

SUGGESTED STACK pandas + heatmap visualization.

3-HOUR MVP DIRECTION Demonstrate the smallest end-to-end flow that proves the solution concept within the 3-hour window.

12. Criminal Network Graph AnalyzerSIH REFERENCE **SIH26189****PROBLEM STATEMENT**

Takes a mock relationship dataset, such as who called whom or who transacted with whom, and visualizes it as a network graph, highlighting the most central/important nodes.

SUGGESTED STACK networkx + graph visualization.

3-HOUR MVP DIRECTION Demonstrate the smallest end-to-end flow that proves the solution concept within the 3-hour window.

13. Transparent Grievance LedgerSIH REFERENCE **SIH26043 (Blockchain-adapted)****PROBLEM STATEMENT**

Citizen grievances filed against a mock government scheme are logged immutably on a hash-chain, so the status of every complaint (filed, in-progress, resolved) is tamper-evident and publicly auditable, preventing records from being quietly altered or deleted.

SUGGESTED STACK hash-chain/local testnet + web dashboard.

3-HOUR MVP DIRECTION Demonstrate the smallest end-to-end flow that proves the solution concept within the 3-hour window.