

GDG ON CAMPUS RCCIIT



Solution Challenge 2026

Complete Resource Guide — GDG on Campus RCCIIT

REFERRAL CODE

NR3ETD

*Enter this during registration — required to link your submission to
GDG on Campus RCCIIT*

00 · How to Register

Follow these four steps exactly. Missing the referral code means your registration will not be counted through GDG on Campus RCCIIT.

 REFERRAL CODE — ENTER THIS DURING REGISTRATION

NR3ETD

 Without this code, your registration will **NOT** be counted through GDG on Campus RCCIIT.

Step-by-Step Registration Guide

Step 1 Watch the Registration Video

Before registering, watch the full walkthrough video to understand the complete process, eligibility requirements, and what is expected at each stage of the challenge.

▶ **Watch:** <https://www.youtube.com/watch?v=ILxZpZLG5gg>

Step 2 Read the Participants Playbook

The official playbook contains all the rules, timeline details, submission requirements, and judging criteria. Read it carefully before you start building anything.

 **Playbook:**

<https://docs.google.com/document/d/1YhdF5wf5Q1b70AxlDutSLNAct1N4vsj8vINika2RW-A/edit>

Step 3 Register Using the Referral Code

Go to promptwars.in/solutionchallenge2026.html and complete registration. When asked for a referral code, enter **NR3ETD** exactly as shown — no spaces, case-sensitive.

Step 4 Form Your Team & Start Building

Teams of 1–4 members. All members must be 18+ and currently enrolled in an Indian university. Prototype submission deadline is 24 April 2026.

Quick Reference Links

Registration Video

[youtube.com/watch?v=ILxZpZLG5gg](https://www.youtube.com/watch?v=ILxZpZLG5gg)

Participants Playbook

docs.google.com/document/d/1YhdF5wf5Q...

Have Questions? Ask Us Here!

The **GDG on Campus RCCIIT** team is always ready to help — whether it's registration queries, team formation, technical doubts, or anything about the challenge. Join our WhatsApp group:

 **WhatsApp Group:** <https://chat.whatsapp.com/BY1JcW5tXfnGfzp5vb8foj>

01 · Key Dates & Timeline

Stage	Timeline	Notes
<input checked="" type="checkbox"/> Registration Open	6 Mar – 15 Apr 2026	<i>Use code NR3ETD</i>
Prototype Submission	13 Mar – 24 Apr 2026	<i>Working MVP required</i>
Prototype Evaluation	29 Apr – 28 May 2026	<i>Judged on all 4 criteria</i>
Top 100 Announced	29 May 2026	<i>Shortlist + Product Vault</i>
Live Product Hosting	30 May – 9 Jun 2026	<i>Deploy to production</i>
Top 10 Finalists	20 Jun 2026	<i>Final selection</i>
 Grand Finale (Virtual)	Late June 2026	<i>Live pitch + prize ceremony</i>

02 · Official Problem Statements

Five official tracks for Solution Challenge 2026 India. Each allows an Open Innovation variant — your own angle within the theme.

TRACK 01 Digital Asset Protection

Protecting the Integrity of Digital Sports Media

Sports organizations generate massive volumes of high-value digital media that rapidly scatter across global platforms, making it nearly impossible to track. This vast visibility gap leaves proprietary content highly vulnerable to widespread digital misappropriation, unauthorized redistribution, and intellectual property violations.

Objective: Develop a scalable, innovative solution to identify, track, and flag unauthorized use or misappropriation of official sports media across the internet. Enable organizations to proactively authenticate their digital assets and detect anomalies in content propagation in near real-time.

Tags: AI/ML · Content Detection · IP Protection · Real-time · Computer Vision

TRACK 02 Rapid Crisis Response

Accelerated Emergency Response and Crisis Coordination in Hospitality

Hospitality venues face unpredictable, high-stakes emergencies that demand instantaneous, coordinated reactions to protect lives and property. During a crisis, critical information is often siloed, fracturing communication between distressed guests, on-site staff, and first responders.

Objective: Design a robust solution to instantly detect, report, and synchronize crisis response efforts across a decentralized hospitality ecosystem. Eliminate fragmented communication by creating a highly reliable bridge between distressed individuals, active personnel, and emergency services.

Tags: Real-time · Communication · Emergency Management · Mobile · IoT

TRACK 03 Smart Supply Chains

Resilient Logistics and Dynamic Supply Chain Optimization

Modern global supply chains manage millions of concurrent shipments across highly complex and inherently volatile transportation networks. Critical transit disruptions — from weather events to hidden operational bottlenecks — are chronically identified only after delivery timelines are already compromised.

Objective: Design a scalable system capable of continuously analyzing multifaceted transit data to preemptively detect and flag potential supply chain disruptions. Formulate dynamic mechanisms that instantly execute or recommend highly optimized route adjustments before localized bottlenecks cascade into broader delays.

Tags: Predictive AI · Logistics · Optimization · Big Data · Routes API

TRACK 04  **Unbiased AI Decision***Ensuring Fairness and Detecting Bias in Automated Decisions*

Computer programs now make life-changing decisions about who gets a job, a bank loan, or even medical care. However, if these programs learn from flawed or unfair historical data, they will repeat and amplify those exact same discriminatory mistakes.

Objective: Build a clear, accessible solution to thoroughly inspect data sets and software models for hidden unfairness or discrimination. Provide organizations with an easy way to measure, flag, and fix harmful bias before their systems impact real people.

Tags: AI Fairness · ML Auditing · Ethics · Responsible AI · Vertex AI

TRACK 05  **Smart Resource Allocation***Data-Driven Volunteer Coordination for Social Impact*

Local social groups and NGOs collect a lot of important information about community needs through paper surveys and field reports. However, this valuable data is often scattered across different places, making it hard to see the biggest problems clearly.

Objective: Design a powerful system that gathers scattered community information to clearly show the most urgent local needs. Build a smart way to quickly match and connect available volunteers with the specific tasks and areas where they are needed most.

Tags: Social Impact · Data Aggregation · NGO Tech · Mapping · Firebase

 **Open Innovation:** For every theme, you may choose the Open Innovation path — pursuing a unique direction while staying aligned to the chosen challenge space.

03 · What to Build — Project Ideas *NOT CONCRETE*

MVP concepts mapped to each track. Use as starting points — the strongest projects add local context or a novel insight on top. These are just ideas we suggest you to come up with your own.

Track 01 · Digital Asset Protection

Idea A: Media Fingerprint Scanner

Use Cloud Vision API and perceptual hashing to scan social platforms for near-duplicate sports images and videos. Dashboard shows unauthorized reposts with confidence scores, timestamps, source URLs, and geographic spread.

Core Tech: Cloud Vision API · BigQuery · Cloud Scheduler · Vertex AI · Looker Studio

Idea B: Invisible Watermark System

Embed cryptographic steganographic watermarks in media at upload time. Build a crawler pipeline that detects these watermarks at scale. Alert brand teams when media appears without a valid license token.

Core Tech: Vertex AI · Cloud Functions · Pub/Sub · Firebase · Cloud Storage

Track 02 · Rapid Crisis Response

Idea A: Hotel Emergency SOS App

Flutter app where guests trigger SOS with a single tap, broadcasting real-time GPS to a staff operations dashboard. Offline fallback via SMS. Staff app shows incident map with response assignments and escalation timers.

Core Tech: Flutter · Firebase Realtime DB · Maps API · Cloud Functions · Dialogflow CX

Idea B: AI Incident Classifier

Staff describe incidents in natural language; Gemini API classifies severity (1–5), auto-routes to the correct department, pre-fills incident reports, and notifies emergency services for Priority 1 events automatically.

Core Tech: Gemini API · Firebase · Flutter · Cloud Run · Natural Language API

Track 03 · Smart Supply Chains

Idea A: Disruption Prediction Dashboard

Ingest weather, port congestion, and road traffic APIs; train a Vertex AI model to forecast delays 48–72 hours ahead. Visualize risk as a heatmap on Google Maps. Push alerts with alternative routes before delays cascade.

Core Tech: Vertex AI · BigQuery · Maps API · Routes API · Pub/Sub · Looker Studio

Idea B: Dynamic Route Optimizer

Real-time rerouting engine using Routes API and an ML model trained on historical delay patterns. Side-by-side view of original vs. optimized routes with estimated savings in cost and time per shipment.

Core Tech: Routes API · Cloud Run · Vertex AI · Flutter · Firebase

Track 04 · Unbiased AI Decision

Idea A: Bias Audit Toolkit

Upload a CSV dataset or model; receive a fairness report showing demographic parity gaps, disparate impact ratios, and flagged high-risk features. Export a PDF with prioritized mitigation recommendations.

Core Tech: Vertex AI · AI Fairness 360 · Cloud Run · Firebase · Flutter/Angular

Idea B: Fair Hiring Language Checker

HR teams paste job descriptions; Gemini API identifies gender-coded language, age-proxy bias, and discriminatory patterns. Suggests rewritten alternatives with a fairness score before and after each edit.

Core Tech: Gemini API · Cloud Run · Firebase · React / Angular

Track 05 · Smart Resource Allocation

Idea A: NGO Volunteer Dispatch App

NGOs post needs with location, urgency, and skill tags. Firebase ML matches nearby volunteers by skill set. Live map shows active deployments, completion rates, and aggregated impact metrics for donors.

Core Tech: Flutter · Firebase · Maps API · Vertex AI · Firestore

Idea B: Community Need Intelligence Platform

Aggregate field reports via Dialogflow; cluster by need type and geography using Vertex AI; surface a live priority heatmap so coordinators allocate resources to highest-need zones first.

Core Tech: Dialogflow CX · Vertex AI · BigQuery · Maps API · Looker Studio

04 · Recommended Tech Stack

Judges reward meaningful, well-justified Google technology usage. Pick tools that genuinely solve your specific problem better.

AI & Machine Learning

- Gemini API — text, vision, audio, multimodal
- Vertex AI — custom training + AutoML
- Cloud Vision API — image analysis at scale
- Natural Language API — text understanding
- Dialogflow CX — conversational AI agents
- TensorFlow / Keras — custom model building
- MediaPipe — on-device ML for mobile

Backend & Data

- Firebase — Auth, Firestore, Cloud Functions
- Cloud Run — scalable containerized APIs
- BigQuery — analytics at petabyte scale
- Pub/Sub — event-driven streaming
- Cloud Storage — media and file storage
- Cloud SQL / Spanner — relational data

Frontend & Mobile

- Flutter — cross-platform (iOS, Android, Web)
- Angular or React — web dashboards
- Maps JavaScript API — interactive maps
- Places API — location intelligence
- Routes API — routing and directions
- Looker Studio — data dashboards
- NextJS and React- Websites

DevOps & Infrastructure

- Google Cloud (free credits for teams)
- Cloud Build — CI/CD pipelines
- Artifact Registry — container images
- Secret Manager — API key management
- Cloud Monitoring + Logging — observability
- Identity Platform — auth and SSO

05 · Learning Resources

Curated resources to take you from idea to a working, submission-ready prototype.

Official Google Resources

OFFICIAL

Google for Developers — Codelabs

Step-by-step guided labs for Flutter, Firebase, Google Cloud AI, and Maps. Search "Solution Challenge" codelabs for curated learning paths.

→ codelabs.developers.google.com

OFFICIAL

Gemini API Quickstart & Documentation

Learn text, vision, audio, and multimodal capabilities. Essential for all 5 tracks.

→ ai.google.dev/docs

OFFICIAL

Vertex AI Documentation

Custom model training, AutoML, and MLOps on Google Cloud.

→ cloud.google.com/vertex-ai/docs

OFFICIAL

GDSC Solution Challenge Hub

Official submission portal, guidelines, FAQ, and mentorship booking.

→ developers.google.com/community/gdsc-solution-challenge

Courses & Learning Paths

COURSE

Google Cloud Skills Boost

Free labs for Cloud Run, BigQuery, Pub/Sub, and Cloud Functions. Earn badges.

→ cloudskillsboost.google

COURSE

Machine Learning Crash Course — Google

Fast-paced ML introduction covering supervised learning, evaluation, and AI fairness.

→ developers.google.com/machine-learning/crash-course

COURSE

Responsible AI Practices — Google

Build AI responsibly — fairness, transparency, privacy. Strengthens Track 4 submissions.

→ ai.google/responsibility/responsible-ai-practices/

Videos & Tools

VIDEO

Firestore YouTube Channel

Official tutorials for Firestore, Firebase Auth, Cloud Functions, and Flutter/Firebase.

→ youtube.com/@Firebase

VIDEO

Solution Challenge 2025 — Winner Videos

Watch past winners' demo videos, architecture narration, and impact framing.

→ youtube.com — search "GDSC Solution Challenge winners 2025"

TOOL

AI Fairness 360 (IBM Open Source)

Python toolkit for measuring and mitigating bias in ML models. Directly applicable for Track 4.

→ aif360.mybluemix.net

TOOL

Teachable Machine — Google

Train image/sound classifiers in browser with zero ML experience. Great for rapid prototyping.

→ teachablemachine.withgoogle.com

06 · Past Solution Challenge Winners

Study problem clarity, technical depth, and how impact is measured. Watch the demo videos.

Global Winners 2024

GLOBAL WINNER · 2024 🏆 **First Place**

Recura

University of Electronic Science and Technology of China

AI-powered platform helping cancer patients manage chemotherapy side effects at home — monitoring symptoms, providing personalized guidance, and connecting patients to care teams in real time.

Tech: Gemini API · Flutter · Firebase · Vertex AI · Healthcare

GLOBAL WINNER · 2024 🏆 **Second Place**

ATTI

Universitas Indonesia

AI assistant supporting autistic children in learning social communication skills through adaptive, personalized conversational exercises and real-time caregiver feedback.

Tech: Vertex AI · Flutter · Firebase · Education & Accessibility

GLOBAL WINNER · 2024 🏆 **Third Place**

Sustain

Cairo University

Sustainability platform helping households and businesses track, reduce, and offset their carbon footprint using AI recommendations and gamification.

Tech: Gemini API · Maps API · Flutter · Firebase · Climate Tech

Global Winners 2023

GLOBAL WINNER · 2023 🏆 **First Place**

EcoRanger

Institut Teknologi Bandung, Indonesia

Mobile app using computer vision to identify endangered species via camera, connecting citizen reports to conservation organizations and government authorities.

Tech: Cloud Vision API · Flutter · Cloud Functions · Maps API

GLOBAL WINNER · 2023  **Second Place**

FarmAI

University of Nairobi, Kenya

AI agricultural assistant for smallholder farmers — crop disease detection, yield prediction, and market price intelligence for low-connectivity environments.

Tech: ML · Cloud Vision API · Flutter · Firebase · AgriTech

07 · Prize Structure

Category	Prize
🏆 Winners	₹4,00,000
🥈 1st Runner-up	₹3,00,000
🥉 2nd Runner-up	₹2,00,000
★ Special Category 1	₹50,000
★ Special Category 2	₹50,000

08 · Evaluation Criteria

 Technical Merit — 40% <i>Depth of implementation, code quality, AI integration justification, performance, security. The biggest single criterion — build real systems.</i>	40% weight
 Alignment With Cause — 25% <i>How directly and credibly does your solution address the problem? Is the impact measurable and backed by data?</i>	25% weight
 Innovation & Creativity — 25% <i>Novel approach, creative use of technology, and originality relative to existing tools. Real insight, not novelty for its own sake.</i>	25% weight
 User Experience — 10% <i>Is the solution intuitive for the target audience? Does the design serve the actual user context?</i>	10% weight

09 · Tips for Winning

01 **Solve a real problem**

Talk to actual users before writing code. Winners cite 3–5 real user interviews in submissions. User quotes in your deck carry more weight than feature lists.

02 **Justify every technology choice**

"Why Gemini over another LLM?" Have a real, specific answer. Intentional decisions score higher under Technical Merit.

03 **Ship a live working demo**

A hosted, clickable prototype beats slides every time. Use Cloud Run + Firebase Hosting. A small focused feature set that works beats a large broken one.

04 **Quantify impact with numbers**

Not "saves time" — but "reduces response time from 8 minutes to 90 seconds in our test." Numbers make impact tangible and memorable.

05 **Master your 3-minute video**

Structure: problem (15s) → live demo (2m) → impact (45s). No slides-only videos — judges want to see the live product.

06 **Narrow scope, deep execution**

One track, one persona, one workflow done extremely well beats a broad platform with shallow features.

07 **Design for scale from the start**

Use Cloud Run, Firestore, BigQuery intentionally — and explain why in your architecture diagram.

08 **Keep your GitHub repo clean**

Detailed README, meaningful commits, architecture diagram, CI pipeline — these signal real engineering discipline.

10 · Submission Checklist

Phase 1 — Initial Prototype (Due 24 April 2026)

- Problem Statement: crisp definition of the exact problem you are solving
- Solution Overview: how your prototype addresses that problem
- Prototype Link: live MVP showing core functionality (must be accessible)
- Project Deck: approach, architecture, tech stack, and impact
- GitHub Repository: public source code with README and runnable structure
- Demo Video: 3-minute walkthrough of the product in action

Phase 2 — Top 100 Product Vault Refinement

- Updated prototype link with visible improvements since Phase 1
- Refined deck covering technical depth, usability, scalability, and impact
- Updated demo video showcasing progress since initial submission
- Short changelog describing major refinements made

Phase 3 — Grand Finale (Late June 2026)

- Final Prototype: stable, fully functional, demo-ready product
- Final Project Deck: goals, architecture, product story, measurable impact
- Final Demo Video: sharp 3-minute walkthrough of the complete solution

Referral Code: [NR3ETD](#)

Registration Video: youtube.com/watch?v=ILxZpZLG5gg

Participants Playbook:

docs.google.com/document/d/1YhdF5wf5Q1b70AxldutSLNAct1N4vsj8vINika2RW-A

Registration Portal: promptwars.in/solutionchallenge2026.html

Deadline: **15 April 2026**

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