INSTITUTION'S INNOVATION COUNCIL
(Ministry of HRD Initiative)

BHARATI VIDYAPEETH COLLEGE OF ENGINEERING NAVI MUMBAI

Presents

LOOP

WHERE IDEAS LOOP INTO WORLD CHANGING HACKS

24 HOURS OFFLINE

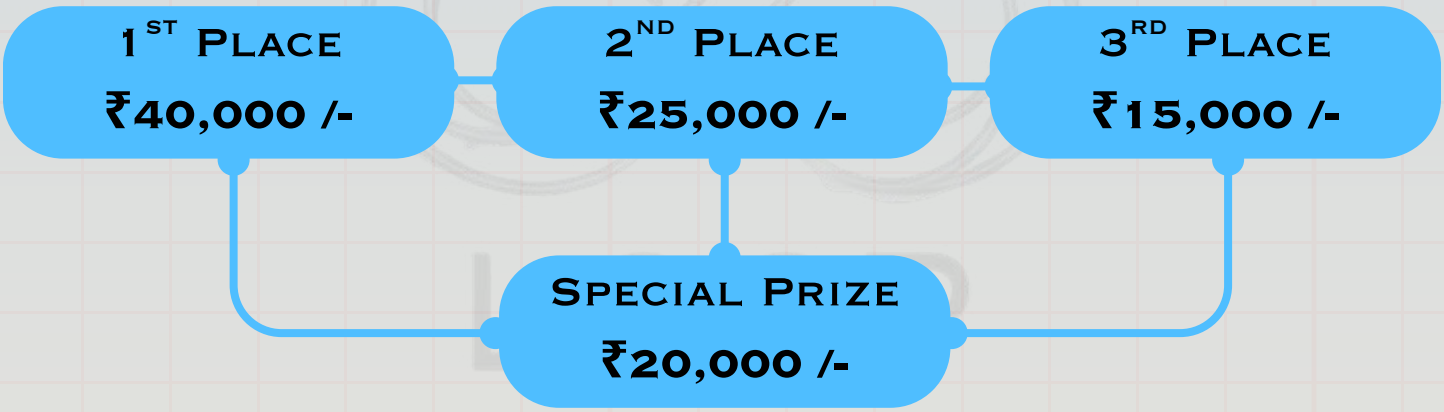
NATIONAL LEVEL HACKATHON

LOOP

POWERED BY unstop

24 HOURS NATIONAL HACKATHON

Prize Pool: ₹1,00,000 /-



Details:

Venue: Bharati Vidyapeeth College Of Engineering
Navi Mumbai

Date: 11TH March 26'

Time: 09:00 AM Onwards

Team: 3 - 6 Members

ABOUT US

Loop is a 24-hour National Level Hackathon aimed at encouraging students to solve real-world and institutional problems using advanced technologies. The event focuses on innovation beyond basic application development, promoting impactful solutions in automation, robotics, AI systems, and smart infrastructure.
Participants will collaborate, ideate, and build solutions that have practical relevance and future scalability.

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What sets Loop apart is its focus on depth over speed. Rather than encouraging surface-level prototypes, the hackathon challenges participants to think in systems—considering failure, iteration, scalability, and real-world constraints from the very beginning. Teams are evaluated not only on what they build, but on how they think, refine, and justify their solutions.

LOOP IS NOT JUST ABOUT BUILDING FAST

IT'S ABOUT BUILDING RIGHT.

OUR PATRONS

Chief Patron

Hon'ble Dr. Vishwajit Kadam

Secretary & Pro Vice Chancellor

Bharati Vidyapeeth Pune

Patron

Dr. Vilasrao Kadam

Director

Bharati Vidyapeeth's

Educational Complex, Navi Mumbai

Hackathon Chairperson

Dr. Sandhya Jadhav

Principal

Bharati Vidyapeeth College of Engineering,

Navi Mumbai

RULES

1. **Who can Participate:**

- Any **Undergraduate** who are doing **Bachelor's Degree** in any field.
- **Team Size** must be 3 - 6 members only
- Inter College team participation is allowed

2. **Submission Requirements:**

- Each team must prepare a PowerPoint or Canva presentation (PPT) using the official template provided by the organizing committee.
- Teams are required to submit the following on the Unstop dashboard:
  - Final PPT
  - Prototype (code repository link, screenshots, or working demo)
  - Optional video presentation explaining the solution
- All submissions must be completed on or before Monday, 20 Febuary 2026.
- Late submissions will not be accepted under any circumstances.

3. **Originality & Authenticity:**

- All submitted content must be original work created by the participating team.

4. **Prototype & Video Guidelines:**

- The prototype should clearly demonstrate the core idea and functionality of the proposed solution.
- The optional video presentation (if submitted) should:
- Be concise and clearly explain the problem, solution, and demo
- Not exceed the time limit specified in the submission guidelines
- Submissions without a working prototype may receive lower evaluation scores.

5. **Evaluation Process:**

- Teams will be evaluated only on the basis of their submitted materials, including:
  - Powerpoint Presentation
  - Prototype (Live link / screenshots , Figma/G-Drive links)
  - Optional video presentation
- Evaluation criteria include:
  - Innovation & originality
  - Technical complexity
- The decision of the Evaluation Committee and Judges shall be final and binding.

6. Confidentiality & Fair Play:

- Participants must not share, publish, or disclose any problem statements, evaluation materials, or solutions outside the scope of the event.
- Any breach of confidentiality or attempt to gain unfair advantage will result in disqualification.

7. **Communication & Updates:**

- All official communication, announcements, and updates will be made exclusively through:
  - Registered email IDs
  - The Unstop platform
- Team leaders are responsible for regularly checking their emails and the platform for updates.

8. **Code of Conduct & Acknowledgment:**

- Participants are expected to maintain professional and ethical conduct throughout the event.
- Any form of misconduct, misbehavior, or violation of hackathon rules may lead to disqualification at the discretion of the organizing committee.
- By submitting entries for the Online Evaluation Round of Loop, participants confirm that they have read, understood, and agreed to abide by all the above terms and conditions.

NOTE:

SPECIAL PRIZE CRITERIA WILL BE DETERMINED BY THE JUDGES ON THE DAY OF HACKATHON.

TIMELINE

Day	Timing	Activity/Session
DAY 1	9:00 - 10:00 AM	Participants Registration
DAY 1	10:00 - 10:30 AM	Opening Ceremony & Announcements
DAY 1	10:30 - 01:30 PM	Hackathon Begins
DAY 1	01:30 - 02:30 PM	Lunch Break
DAY 1	02:30 - 05:00 PM	Mentor Screening & Guidance (Round 1)
DAY 1	05:00 - 05:30 PM	Tea & Snacks Break
DAY 1	05:30 - 08:00 PM	Development continues
DAY 1	08:00 - 09:00 PM	Dinner
DAY 1	09:00 - 11:00 PM	Mentor Screening & Guidance (Round 2)

Date	Timing	Activity/Session
DAY 1	11:00 - 11:30 PM	Midnight Fun
DAY 1	11:30 - 12:00 AM	Coffee/Snacks Break
DAY 2	12:00 - 03:00 AM	Mentor Screening & Guidance (Round 3)
DAY 2	03:00 - 05:00 AM	Development Continues
DAY 2	05:00 : 05:30 AM	Tea/Coffee Break
DAY 2	07:30 - 08:30 AM	Breakfast
DAY 2	08:30 - 10:00 AM	Development Continues
DAY 2	10:00 - 10:30 AM	Submissions
DAY 2	10:30 - 12:00 PM	Evaluation by Judges
DAY 2	12:00 PM Onwards	Winner Announcement & Prize Distribution

PROBLEM STATEMENTS

Track 1: Build for Failure & Reliability

Intelligent systems that learn, adapt, or predict with limited, noisy, or incomplete data

Problem Statement 1 : Healthcare: Symptom Checker & Triage System

Description : Design a clinically reliable, real-time symptom checker and triage system that combines conversational AI, medical imaging analysis, and patient context modeling to make high-stakes care recommendations under uncertainty, with accuracy and safety guarantees comparable to trained clinicians. The system must reason over incomplete, ambiguous, and sometimes misleading patient inputs; analyze user-submitted images (e.g., skin lesions, wounds, swelling) with calibrated confidence; detect red-flag conditions and escalation risks; adapt triage decisions based on patient history, comorbidities, and medication use without full records; operate within strict medical safety constraints; provide transparent explanations and confidence scores for every recommendation; support multilingual and low-health-literacy users; and be robust against hallucinations, bias, and over- or under-triage, while demonstrably reducing unnecessary ER visits without increasing adverse outcomes.

Problem Statement 2 : AI/ML: Real-time Classroom Captioning System

Description : Design and build a real-time classroom and meeting captioning system that operates under adversarial acoustic conditions and strict latency limits, using distributed multi-microphone fusion, unsupervised speaker identification, and context-aware language understanding to produce legally auditable transcriptions within 300 ms end-to-end delay. The system must handle overlapping speakers, code-switching, accents, and technical jargon without prior speaker enrollment, run fully on-device for privacy, and provide word-level timestamps, confidence scores, and speaker attribution, with accuracy and responsiveness exceeding human stenography.

Problem Statement 3 : Agritech: Crop Monitoring & Disease Detection Platform

Description : Build a farmer-centric mobile application that allows farmers to select and register the crops they have planted, such as wheat, rice, or jowar, and continuously monitor and plan crop growth throughout the entire farming season. The system should use AI-driven insights instead of generic farming tips by combining crop growth stages, local soil conditions, weather patterns, and farmer inputs to provide daily and stage-wise recommendations on irrigation, fertilization, pest prevention, and yield improvement.

The platform must allow farmers to capture images of their crops using a mobile phone camera and send them to the system for analysis by custom AI/ML models trained to detect crop diseases, pest attacks, nutrient deficiencies, and stress conditions at an early stage. To be practical in real farming environments, the application should work reliably under rural constraints such as poor internet connectivity, low-end smartphones, and limited digital literacy. It should support voice-based interaction for farmers who are not comfortable with typing, allow offline data and photo capture with delayed synchronization when connectivity is available, and deliver region- and crop-specific advice rather than broad, generic suggestions

Problem Statement 4 : Vision-Only Drone Intelligence for Obstacle Avoidance & Real-Time Video Analytics

Description : Create an AI-powered drone intelligence system that operates exclusively on monocular RGB video feeds, without relying on depth sensors or additional hardware. The system should enable a drone to perceive its environment visually and autonomously avoid obstacles in real time, while simultaneously processing live video streams to detect, track, and count objects of interest.

Problem Statement 5 : Intelligent Drone Perception, Tracking & Autonomous Navigation

Description : Build an intelligent drone system capable of real-time video analytics, vision-based target tracking, and autonomous path planning in dynamic environments. The system should process live drone video feeds to detect, track, and count objects of interest, while simultaneously maintaining a robust visual lock on moving targets, even in the presence of occlusion, motion blur, and rapid motion. In parallel, an autonomous navigation component should be developed where a reinforcement learning–based agent learns to plan optimal flight paths within a simulated environment containing dynamic obstacles. The navigation intelligence should leverage perceptual insights from video analysis to make informed movement decisions.

Track 2: Human + Machine Decision Systems

Solutions where automation assists humans under uncertainty, without replacing judgment

Problem Statement 1 : Healthcare: Peer Support Matching Platform

Description : Build a peer support matching platform that uses NLP to connect people experiencing similar mental health challenges based on their journal entries, creating safe spaces for shared experiences and mutual support.

Problem Statement 2 : Education: AI Academic Agent for Universities

Description : Build a mission-critical, closed-loop AI academic agent for universities that replaces ad-hoc search and generic tutoring by acting as a governed learning companion tied directly to institutional curriculum, assessment, and student progression data. The system must reason exclusively over faculty-approved knowledge bases and course artifacts, dynamically track each student's conceptual mastery, misconceptions, and accessibility needs, and adapt explanations, examples, and pacing in real time through multimodal interaction (speech-first, text, visual summaries). It must support high-stakes use cases—exam preparation, assignment clarification, prerequisite gap detection, and assistive learning for students with disabilities—while enforcing academic integrity, preventing answer leakage, and providing teachers with explainable insight into student understanding, content gaps, and curriculum effectiveness.

Problem Statement 3 : AI/ML: Comprehensive Examination AI System

Description : Manual exam paper setting takes 200+ hours per subject with inconsistent difficulty levels. Paper leaks and cheating rampant with 30% exams compromised annually. Evaluation takes 45-60 days with 15% scoring errors causing revaluation requests. Develop comprehensive examination AI that auto-generates question papers using NLP ensuring curriculum coverage, difficulty distribution, and bloom's taxonomy levels, creates infinite question variations making paper leaks irrelevant while maintaining equivalent difficulty, implements adaptive testing adjusting question difficulty based on student responses measuring true competency levels, provides AI proctoring using facial recognition, gaze tracking, audio monitoring, and browser lockdown detecting 20+ cheating behaviors, enables automated evaluation of subjective answers using NLU comparing against rubrics and awarding partial credits, offers accessibility features including text-to-speech, speech-to-text, extended time, and adjustable interfaces for disabled students. Include teacher dashboard for question bank management with proctoring detecting 95% of cheating attempts with <2% false positives for 1M concurrent test-takers.

Problem Statement 4 : Agritech: AI-Powered Government Scheme Discovery Platform

Description : India has 700+ government schemes for farmers and rural communities, yet 60% of eligible farmers are unaware of schemes they qualify for.

Only 30% of aware farmers actually apply due to complex eligibility criteria, documentation requirements, and language barriers. Build an AI-powered, multilingual platform that helps farmers discover relevant schemes, understand eligibility, submit applications, and track status through an intelligent conversational interface. The system must analyze profiles (land type, acreage, crops, family structure, income, location) to recommend schemes with highest potential benefit while handling complex conditional eligibility rules and scheme quotas. Build an AI assistant supporting 15+ Indian languages with voice input/output for low-literacy users that understands agricultural terminology and guides users through complex forms. Implement OCR-based document verification, cross-validate inputs against government databases, and auto-generate missing paperwork. Must work offline and sync when online, support 10M+ concurrent users with >95% scheme recommendation accuracy, AI responses under 3 seconds, WCAG 2.1 AA compliant with voice navigation. Provide explainable AI showing why users are eligible/ineligible.

Problem Statement 5 : AI-Driven Project Intelligence for Engineering Teams

Description : Build an intelligent project management system that continuously analyzes tasks and team communication to generate real-time insights, summaries, and alerts—reducing manual reporting and coordination overhead. The system should feel proactive and "always aware," not just a passive task tracker.

Problem Statement 6 : AI-Powered Competitive Exam Performance Analytics Platform

Description : Build an intelligent analytics platform that transforms raw competitive exam and mock-test data into personalized, question-level insights and adaptive study recommendations. The system should continuously learn from new test data and clearly show how preparation guidance improves over time.

Track 3: Early Detection & Failure Prevention

Systems that detect early warning signs, handle degradation, and prevent catastrophic failure

Problem Statement 1 : Healthcare: Smart Healthcare History & Disease Surveillance System

Description : The Smart Healthcare History & Disease Surveillance System is a digital healthcare platform designed to centralize patient medical records, streamline prescription handling, and enable data-driven disease monitoring for early prevention and control. Every patient is provided with a Smart Health Card (QR code or NFC-based) that acts as a secure digital reference to their medical history. A major strength of this system lies in its admin and analytics module. Health administrators and authorities can access anonymized, aggregated data through a centralized dashboard. The system analyzes patient data on the basis of location, time, and disease type to identify patterns and trends. This enables authorities to determine which areas are experiencing a higher number of cases for specific diseases, helping them take preventive measures before the disease spreads widely. Patient data is encrypted, role-based access is implemented, and individual identities are never exposed in analytical reports.

Problem Statement 2 : Automation: Autonomous DevOps & System Reliability Platform

Description : Production systems face 200+ incidents monthly with 4-hour average resolution time. 60% of outages are predictable from monitoring data but detected only after customer impact. Create autonomous DevOps automation that predicts system failures 30-60 minutes in advance using anomaly detection across logs, metrics, and traces, automatically implements corrective actions including service restarts, traffic rerouting, and resource scaling without human intervention, performs intelligent root cause analysis across distributed systems identifying exact failing components and code commits, auto-optimizes database queries and indexes based on execution patterns, manages cloud resources with AI-driven cost optimization shutting down unused instances and rightsizing workloads, implements chaos engineering continuously testing system resilience, and conducts automated deployment with progressive rollouts and instant rollback on error detection. Include ChatOps integration for human oversight and blockchain-based change audit logs. Predict failures with 85% accuracy and 45-minute lead time, reduce MTTR from 4 hours to 15 minutes, false positive rate under 5%, auto-remediation success rate >80%, handle 10 million events per second.

Problem Statement 3 : Automation: Cloud Monitoring & Observability Platform

Description : Build a cloud monitoring and observability platform with an intuitive, attractive web dashboard that allows developers and students to easily add and manage servers, Docker containers, and Kubernetes clusters as needed. The system must provide 24×7 monitoring of uptime, performance, resource usage, crashes, and failures, securely collecting logs, metrics, and traces through a custom SDK using API keys. It should present real-time and historical data through interactive dashboards, graphs, alerts, and service maps, while using AI to analyze logs and incidents, explain problems in simple language, suggest possible root causes and fixes, and generate clear uptime, health, cost-impact, and SLA reports. The platform must support distributed tracing, service dependency visualization, incident timeline replay, offline log capture with later sync, role-based access control, audit history, beginner and advanced views, and scalable ingestion with minimal overhead.

Problem Statement 4 : Intelligent Structural Health Monitoring System

Description : Build an intelligent monitoring system that continuously analyzes structural stress/strain data to detect early signs of fatigue and predict failure risks in critical infrastructure like bridges. The system should convert raw sensor signals into clear, actionable health insights and alerts for proactive maintenance.

Track 4: Trust, Safety & Verification/ CyberSecurity

Systems that establish authenticity, detect risk, or ensure long-term trust in digital or physical environments

Problem Statement 1 : Automation: Secure Cloud Storage Platform with Regulatory Compliance

Description : Design and implement a cost-efficient, cloud-based secure storage platform that replaces third-party services by providing end-to-end encrypted data storage compliant with strict European regulatory standards (GDPR, ISO/IEC 27001, and data residency requirements), while maintaining AWS-grade reliability and upload semantics. The system must enforce zero-trust access control, fine-grained user permissions, immutable audit logs, and cryptographic key management with customer-controlled keys. It must support large-file uploads via resumable, chunked transfer with deduplication, integrity verification, versioning, and safe retry mechanisms that prevent data corruption or overwrite on failure. Users must be able to modify, pause, resume, and retry uploads seamlessly, with strong consistency guarantees, encryption at rest and in transit, verifiable compliance reporting, and predictable low-cost storage economics without sacrificing performance, durability, or regulatory auditability.

Problem Statement 2 : Intelligent Deepfake Detection and Trust Verification System

Description : Build an intelligent deepfake detection and trust verification system that can identify AI-generated or manipulated media content across images, videos, and audio in real-time. The system must analyze digital content for authenticity markers, detecting sophisticated deepfakes, face-swaps, voice cloning, and synthetic media created by advanced generative AI models. It should employ multi-modal analysis combining visual artifacts, audio inconsistencies, temporal anomalies, and metadata forensics to establish content provenance and authenticity. The platform must handle high-resolution media, provide confidence scores and explainable detection results showing specific indicators of manipulation, operate under time constraints for real-time verification (news, social media, legal evidence), and maintain high accuracy even as deepfake generation techniques evolve. The system should support forensic-grade evidence trails, integrate blockchain-based content certification for establishing original authenticity, detect partial manipulations within otherwise genuine content, and provide APIs for integration with social media platforms, news organizations, and legal institutions. It must balance false positive rates to avoid flagging legitimate edited content while maintaining high true positive rates for actual deepfakes, and continuously adapt to emerging deepfake generation methods through adversarial training and model updates.

Problem Statement 3 : Blockchain: Carbon Credit Trading Platform

Description : Create a blockchain-based platform for transparent carbon credit trading that allows individuals and small businesses to buy, sell, and verify carbon offsets while ensuring the authenticity of environmental projects through satellite data integration.

CONTACT US

Address :

Bharati Vidyapeeth College of Engineering,
CBD, Belapur, Sector - 7, Navi Mumbai,
Maharashtra, India - 4000614

Contact Numbers : Call or Whatsapp

Sushil Sahani : +91 99676 12372

Rudra Sawant : +91 84337 59565

Ganesh Wadhe : +91 73910 10739

Contact Faculity Coordinator :

Prof. Dilip Radkar : +91 98907 62656


loop.hackathon


loop-hackathon.vercel.app


loop.hackathon@bvcoenm.edu.in

Good Luck To All Participants !