SMART INDIA HACKATHON 2025

Problem Statement ID – 25073

Problem Statement Title:
"AI Powered Mobile Platform for Democratizing Sports Talent Assessment"

Theme – Fitness & Sports

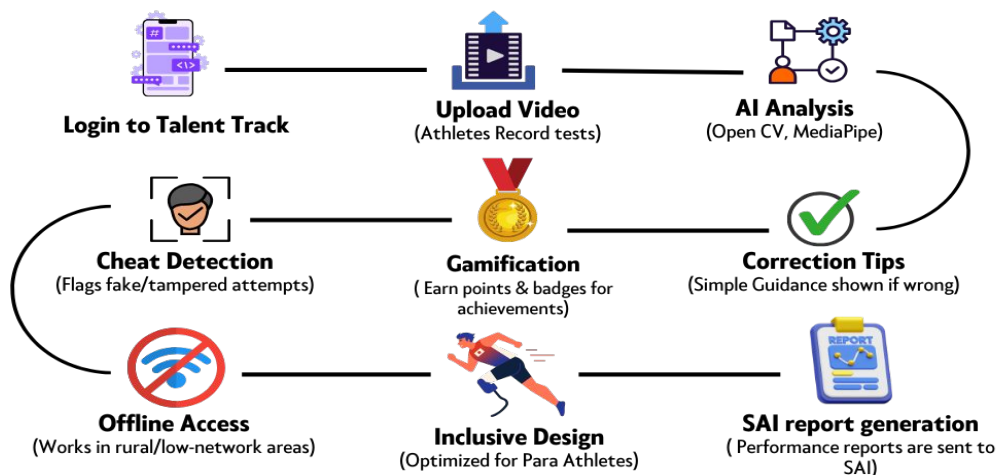**PS Category – Software**

Team ID – 64585

Team Name – Bluegen_606

SUSTAINABLE DEVELOPMENT GOALS

4 QUALITY EDUCATION

3 GOOD HEALTH AND WELL-BEING
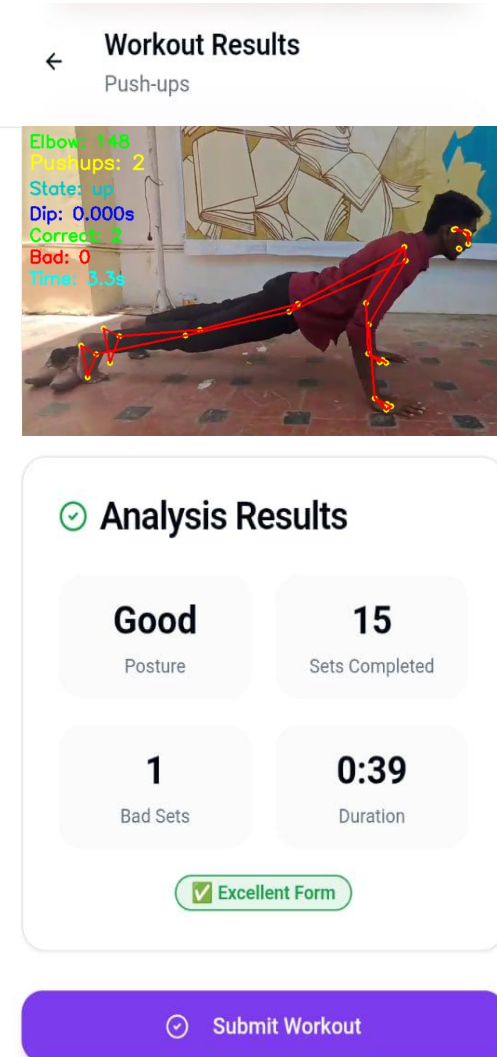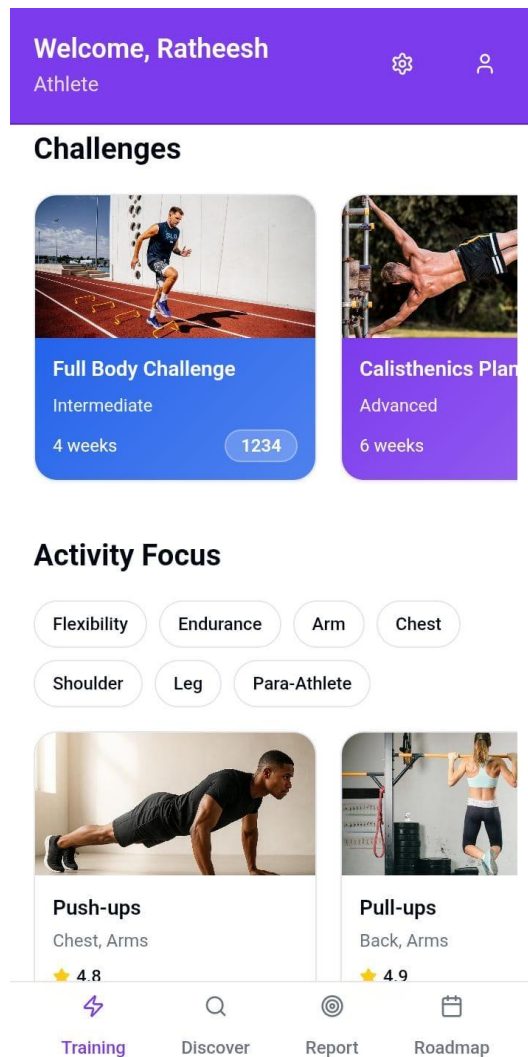
10 REDUCED INEQUALITIES
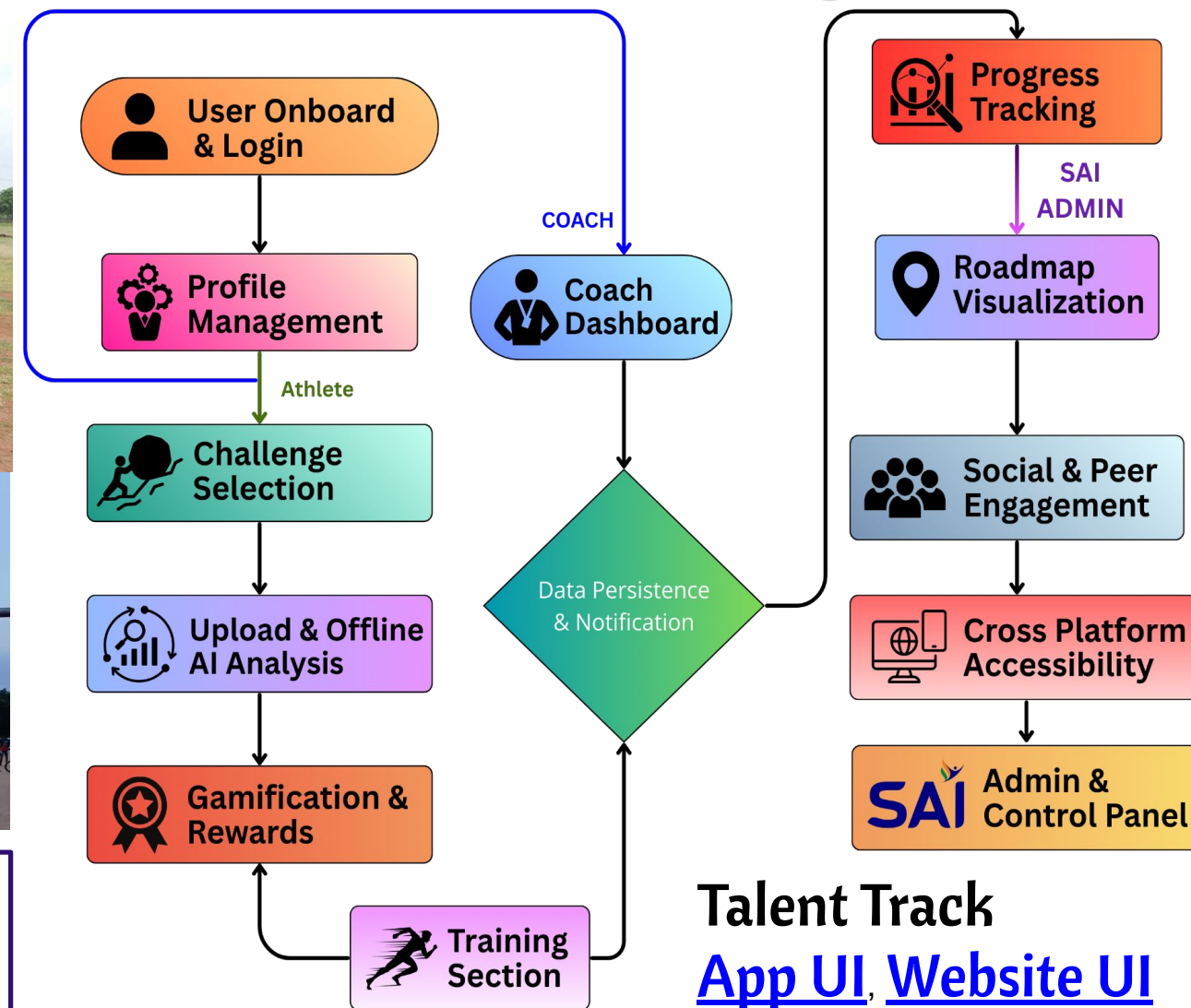
Talent Track

IDEA/SOLUTION

Talent Track is a mobile app that allows athletes to showcase their talent anytime, anywhere using AI. Built with Flutter, it runs seamlessly on all devices. The app uses OpenCV and MediaPipe for video-based motion and posture analysis, giving instant feedback.

Login to Talent Track

Upload Video
(Athletes Record tests)

AI Analysis
(Open CV, MediaPipe)

Cheat Detection
(Flags fake/tampered attempts)

Gamification
(Earn points & badges for achievements)

Correction Tips
(Simple Guidance shown if wrong)

Offline Access
(Works in rural/low-network areas)

Inclusive Design
(Optimized for Para Athletes)

SAI report generation
(Performance reports are sent to SAI)

Talent Track doesn't just record results, it teaches athletes how to improve with **real-time guidance** and **gamified motivation**. By combining **offline AI analysis**, curated for **Para-athletes** too, with **coach and SAI integration**, we turn simple video tests into a complete growth journey.

Welcome, Ratheesh
Athlete

Challenges

Full Body Challenge
Intermediate
4 weeks   1234

Calisthenics Plan
Advanced
6 weeks

Activity Focus

Flexibility   Endurance   Arm   Chest

Shoulder   Leg   Para-Athlete

Push-ups
Chest, Arms
★ 4.8

Pull-ups
Back, Arms
★ 4.9

Training   Discover   Report   Roadmap

← **Workout Results**
Push-ups

Elbow: 148
Pushups: 2
State: up
Dip: 0.000s
Correct: 2
Bad: 0
Time: 3.3s

✓ **Analysis Results**

Good
Posture

15
Sets Completed

1
Bad Sets

0:39
Duration

✅ Excellent Form

⊙ Submit Workout

ATHLETE LOGIN

COACH LOGIN

SAI LOGIN
SAI

FEASIBILITY AND VIABILITY

Technical Feasibility

We use OpenCV + MediaPipe for AI analysis, making video processing lightweight, accurate, and suitable even for entry-level smartphones.

Market Feasibility

Our app taps into the huge pool of rural and semi-urban athletes, backed by programs like Khelo India and SAI, ensuring real adoption.

Financial Feasibility

Built with open-source AI frameworks and on-device processing, reducing server costs, while funding support comes from government and CSR.

Operational Feasibility

A gamified, simple mobile UI allows easy use by athletes with basic digital literacy, while reports auto-sync to coaches and SAI for smooth operations.

Workout Results
Pull-ups

Pull-Ups: 2
State: up
Dip: 1.52s
Time: 4.52s
Elbow Angle: 105

⊘ Analysis Results

Good	22
Posture	Sets Completed
2	0:49
Bad Sets	Duration

☑ Excellent Form

Workout Results
Shuttle Run

Run Count: 1
Distance: 0.51 m
Time: 6:15 s

○ Analysis Results

Bad	3
Posture	Sets Completed
1	0:42
Bad Sets	Duration

⚠ Form Needs Work

Workout Results
Sit-ups

Sit-ups: 25
State: down
Dip: 1.000s
Time: 21 ns

⊘ Analysis Results

Good	13
Posture	Sets Completed
1	0:49
Bad Sets	Duration

☑ Excellent Form

MULTI SPORT EXPANSION
All 10 SAI fitness tests can be performed and assessed through the platform, with scope to expand into multiple sports in the future.

AI

AFFORDABLE AI ADVANTAGE
80% cost reduction with offline-first AI.

CONNECTED TALENT ECO SYSTEM
Athlete → Coach → SAI → Training Camps workflow.

ATHELETE-CENTRIC VALIDATION
Athletes from all regions get equal opportunity to participate, gain fair evaluation, and showcase their talent.

IMPACT AND BENEFITS

Equal Sports Opportunities

↓
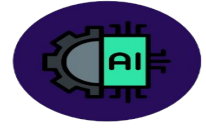
Low-Cost Assessments

↓

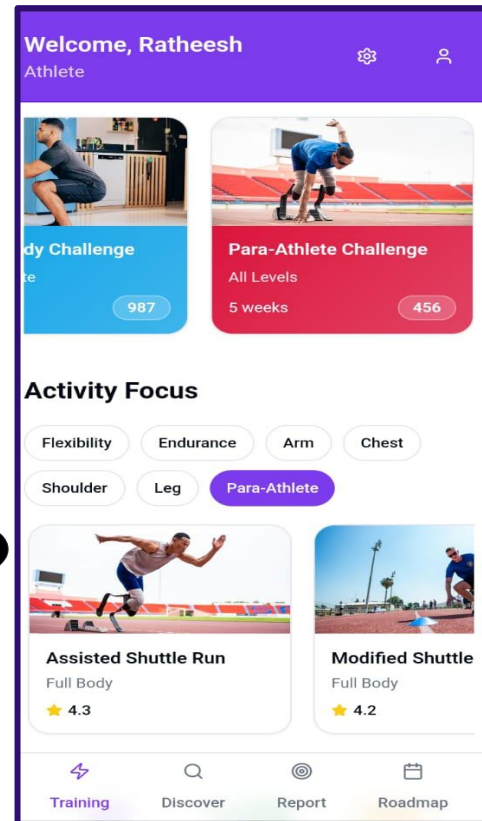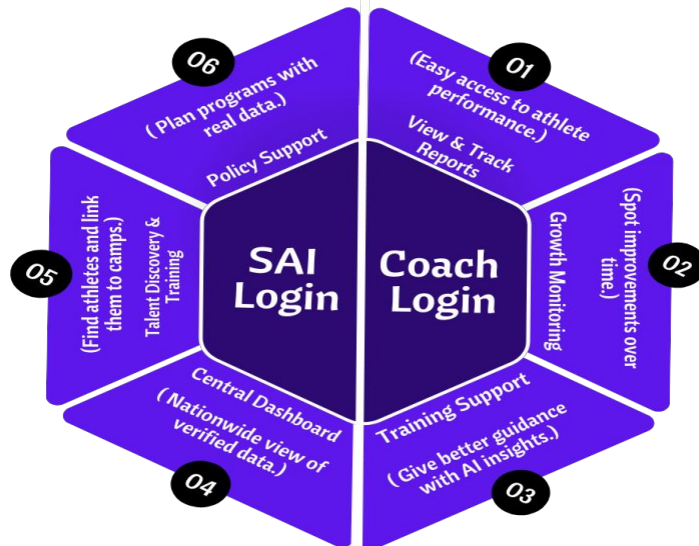**Transparent Performance Tracking**
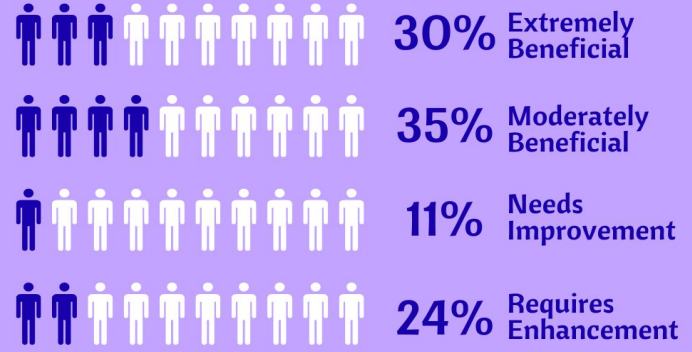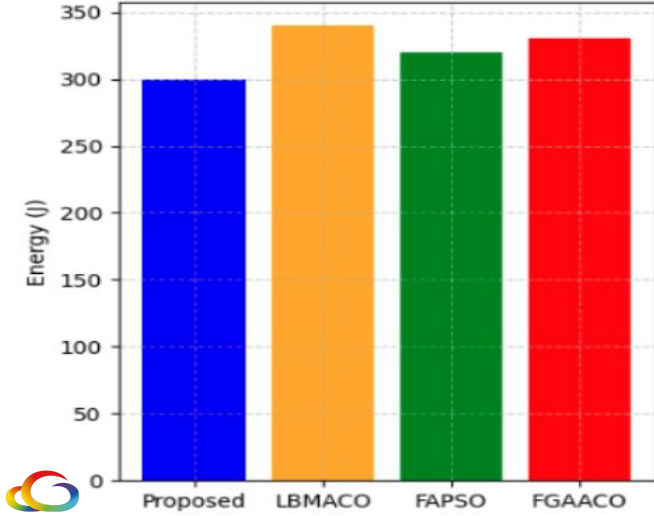
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Transparent Performance Tracking

Data-driven training: SportsSkill wants all athletes to access performance-tracking

Founded in 2021, Pune-based SportsSkill caters to athletes, parents, coaches, and academies, with 1,000+ downloads and active users across cities including Hyderabad, Indore, and Mumbai.

Article Link

Unlike existing systems like SportsSkill that rely on wearables, our platform works with just a **Basic Smartphone** and is also designed to support **Para-athletes**.

Hexagon diagram (SAI Login / Coach Login)

- 01 (Easy access to athlete performance.) View & Track Reports
- 02 (Spot improvements over time.) Growth Monitoring
- 03 (Give better guidance with AI insights.) Training Support
- 04 (Nationwide view of verified data.) Central Dashboard
- 05 (Find athletes and link them to camps.) Talent Discovery & Training
- 06 (Plan programs with real data.) Policy Support

App screen

Welcome, Ratheesh — Athlete

dy Challenge — 987
Para-Athlete Challenge — All Levels, 5 weeks — 456

Activity Focus
Flexibility | Endurance | Arm | Chest
Shoulder | Leg | Para-Athlete

Assisted Shuttle Run — Full Body — ★ 4.3
Modified Shuttle — Full Body — ★ 4.2

Training | Discover | Report | Roadmap

Energy Consumption (chart)

Energy (J), CLOUDSIM

Proposed	LBMACO	FAPSO	FGAACO
300	340	320	330

Survey results

- **30%** Extremely Beneficial
- **35%** Moderately Beneficial
- **11%** Needs Improvement
- **24%** Requires Enhancement

Survey Link

Right column flow

Onboarding and data capture

↓

AI performance analysis

↓

Gamified Progress Tracking

↓

Integrated Talent Pathway

RESEARCH AND REFERENCES

1. **Fusion of Video and Inertial Sensing for Deep Learning**
2. **Vision and Inertial Sensing Fusion for Human Action Recognition**
3. **Transformer-based Sensor Fusion for Human-Centric M and Multi-modal Action Recognition**

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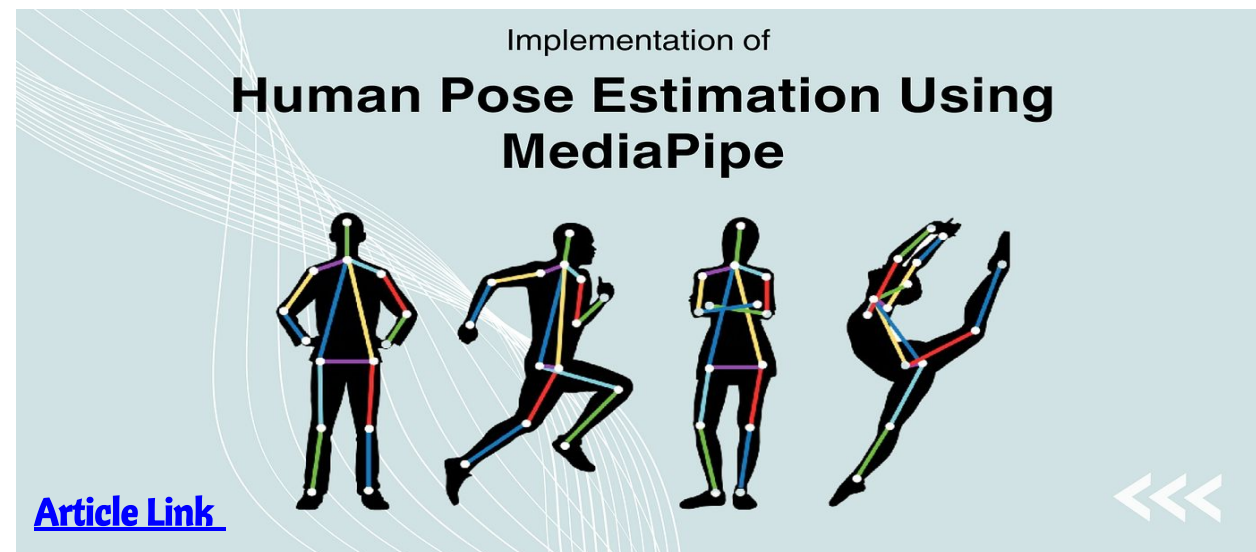Team ID– 64585

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Video Link

Implementation of

Human Pose Estimation Using MediaPipe

Article Link

Article Link

Olympic organizers unveil strategy for using artificial intelligence in sports

Article Link

Our inspiration came from seeing how many young athletes in rural areas struggle to showcase their talent due to lack of access to proper facilities or costly wearables. We wanted to build a simple, smartphone-based solution that could bring fair opportunities to every aspiring sportsperson, no matter where they come from.