

AI for Bharat Hackathon

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Team Name :Algo Brain

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Problem Statement :

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- **The Challenge:** Electronic waste (e-waste) is growing because consumers find it difficult and expensive to repair devices.
- **The Gap:** non-experts lack the technical knowledge to diagnose issues, and professional servicing is often costly or inaccessible in remote areas.
- **Current Solution:** Static manuals or video tutorials that are hard to follow while working with hands.

Brief about the Idea:

- **FixVision** is an AI-powered Augmented Reality (AR) mobile application that empowers users to repair their own electronic devices.
- By pointing their smartphone camera at a broken device (e. g., a circuit board or appliance), the app uses AWS cloud computing to identify the model and the fault.
- It then overlays real-time, 3D animated guides directly onto the screen, showing the user exactly what to unscrew, check, or replace.

Your solution should be able to explain the following:

- How different is it from any of the other existing ideas?
- How will it be able to solve the problem?
- USP of the proposed solution

- **How different is it from existing ideas?**
- Unlike static YouTube videos or PDF manuals, FixVision provides **interactive, real-time guidance**. If the user moves the device, the AR labels move with it.
- It includes an AI diagnostic tool that listens to device sounds or analyzes visual damage to suggest the repair, rather than just showing a generic tutorial.
- **How will it be able to solve the problem?**
- **Democratizes Repair:** Makes technical repair skills accessible to anyone with a smartphone.
- **Reduces E-Waste:** Encourages fixing over throwing away.
- **Cost Effective:** Saves money on professional service fees.
- **USP (Unique Selling Proposition):**
- Real-time "X-Ray" vision for electronics.
- Integrated "Professional Service" button (as seen in your flow chart) to connect with experts if the DIY repair fails.
- AWS-backed object detection for high accuracy.

List of features offered by the solution

AI Visual Diagnostics: Automatically identifies burnt components or loose connections.

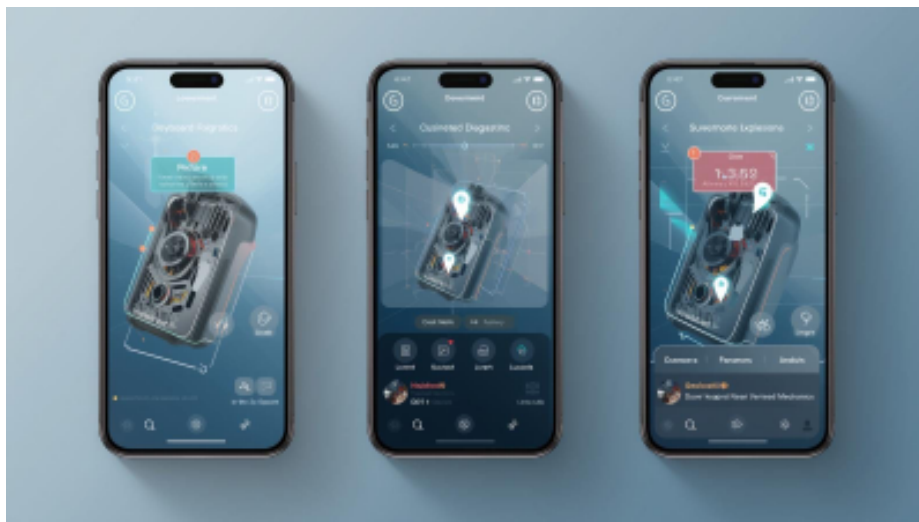
AR Repair Overlays: Highlights specific screws and ports in real-time.

Step-by-Step Guidance: Interactive checklist (e.g., "Disconnect Battery," "Unscrew Panel").

Expert Connect: Video call feature to show a professional the AR view for help.

Visual Representation:

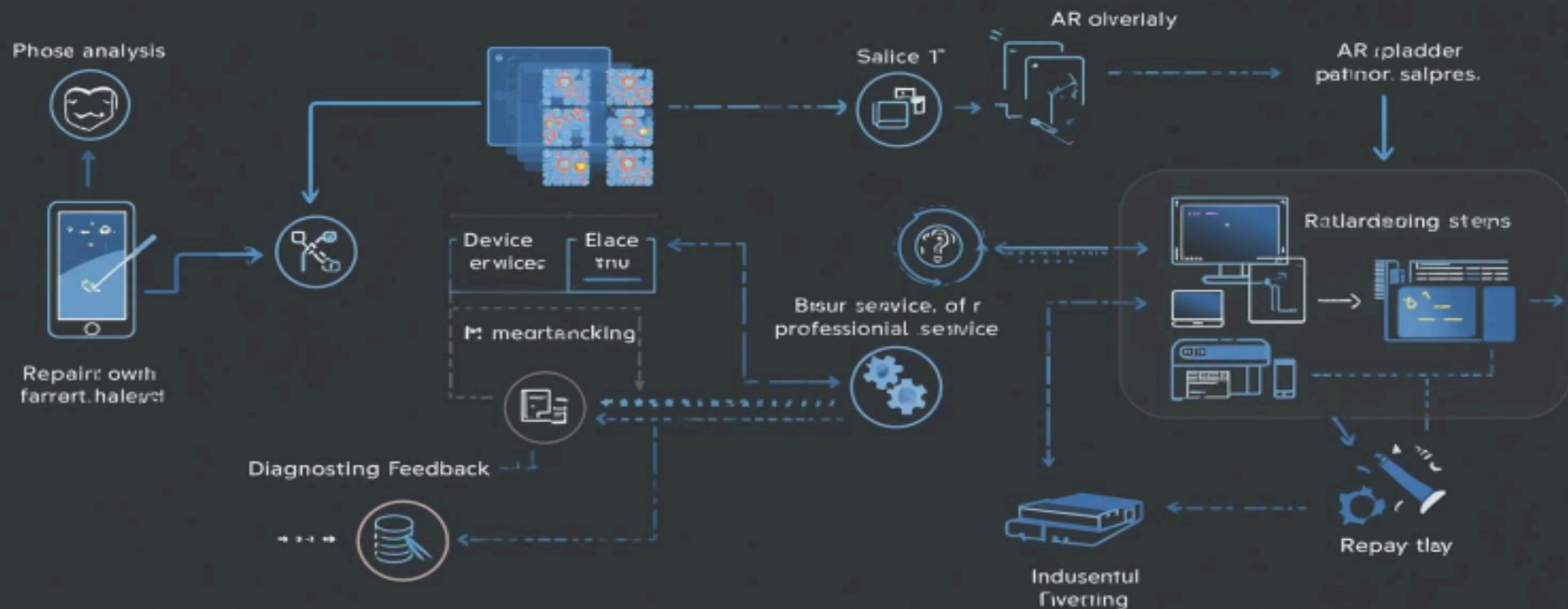
Action:



Caption: "User Interface showing AR Overlays guiding a repair process."

Process flow diagram or Use-case diagram

FixVision AR Platform



Wireframes/Mock diagrams of the proposed solution (optional)



Architecture diagram of the proposed solution:

Frontend: Mobile App (Flutter/React Native) with AR modules (ARCore/ARKit).

Backend (AWS):

Amazon S3: To store 3D models of devices and repair manuals.

Amazon Rekognition: To identify the device model and specific components from the camera feed.

AWS Lambda: Serverless compute to process diagnostic logic.

Database: Amazon DynamoDB for user profiles and repair history.

Technologies to be used in the solution:

Cloud Services: AWS (Amazon Web Services) - specifically Rekognition, SageMaker, and Lambda.

AR Technology: ARCore (Android) / ARKit (iOS) / Unity 3D.

AI/ML: Computer Vision models for object detection and damage assessment.

Development: Flutter (for cross-platform app), Python (for backend logic).

Estimated implementation cost (optional):

Add as per the requirements for the hackathon:

Text: "Thank You! - Empowering a Self-Reliant Bharat through AI & AR."

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Thank You

