

# KRUU GRASP 2026



**presented by :**  
**HEALTH INNOVATORS**

# ABOUT

## **PROBLEM STATEMENT:-** *Urgency-Aware Health Triage and Care Navigation*

**CONTEXT:** *Rural clinics are often overwhelmed by non-emergencies, while serious cases go unnoticed. Patients lack a clear 'care pathway' that explains why they need to see a doctor.*

This project focuses on building an Urgency-Aware Health Triage and Care Navigation System that:

- Analyzes patient symptoms intelligently
- Generates a structured urgency assessment
- Explains the reasoning behind recommendations
- Guides patients to the right healthcare service or specialist

The solution aims to deliver clear, reliable, and responsible triage decisions, ensuring faster care for emergencies and reducing unnecessary clinic overload.

# EXISTING SOLUTIONS

## Web Chatbots & Symptom Checkers

Examples: Online symptom checkers on health portals or apps that ask questions and give advice.

### Limitations

- Often text-only – poor accessibility for uneducated or rural users.
- Provide generic recommendations rather than structured urgency pathways.
- Do not explain reasoning clearly (e.g., why a case is urgent).

## Traditional Telephone Triage

Patients speak with a nurse or call center agent.

Staff manually assesses urgency and guides next steps.

### Limitations

- High staffing cost – requires trained personnel.
- Slow in peak demand – long wait times common.
- Human inconsistency – different triage decisions depending on individual judgment.

# OUR SOLUTION

- Combines IVR + Website, both performing same triage logic
- Uses AI decision engine with symptom weighting
- Explains reasoning clearly –  
e.g., “Combination of age + fever + pregnancy indicates urgent care”
- Produces a structured urgency report
- Redirects to appropriate specialist or next step
- Designed for accessibility, clarity & defensibility

## Advantages Over Existing Solutions

### Multi-Channel Accessibility

- IVR for low-tech / rural users
- Web interface for broader access

Ensures no one is excluded due to device or literacy limitations.

### Clear Justification & Traceable Path

- Each triage decision is explained
- Improves patient trust

Evaluation and debugging become easier

# Proposed Solutions

## Solution # 1

Intelligent Triage Engine: Instantly separates non-emergencies from critical cases using AI.

## Solution # 2

"Traffic Light" Prioritization: Auto-assigns Red (Critical), Yellow (Urgent), or Green (Routine) status.

## Solution # 3

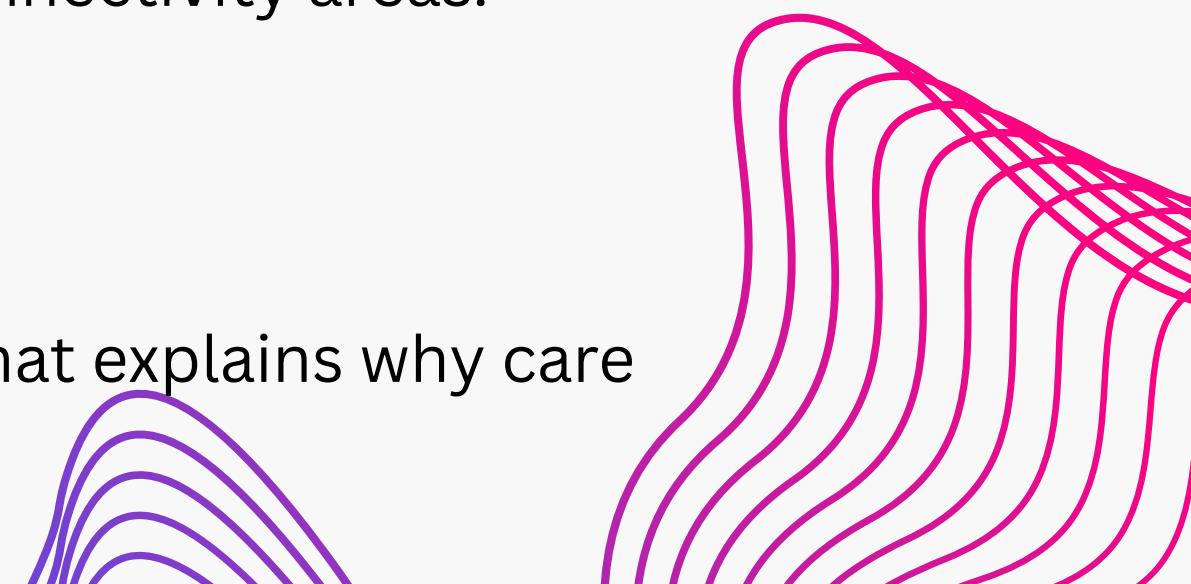
Pre-Arrival "Handshake": Alerts the hospital and generates an Advance Token before the patient arrives.

## Solution # 4

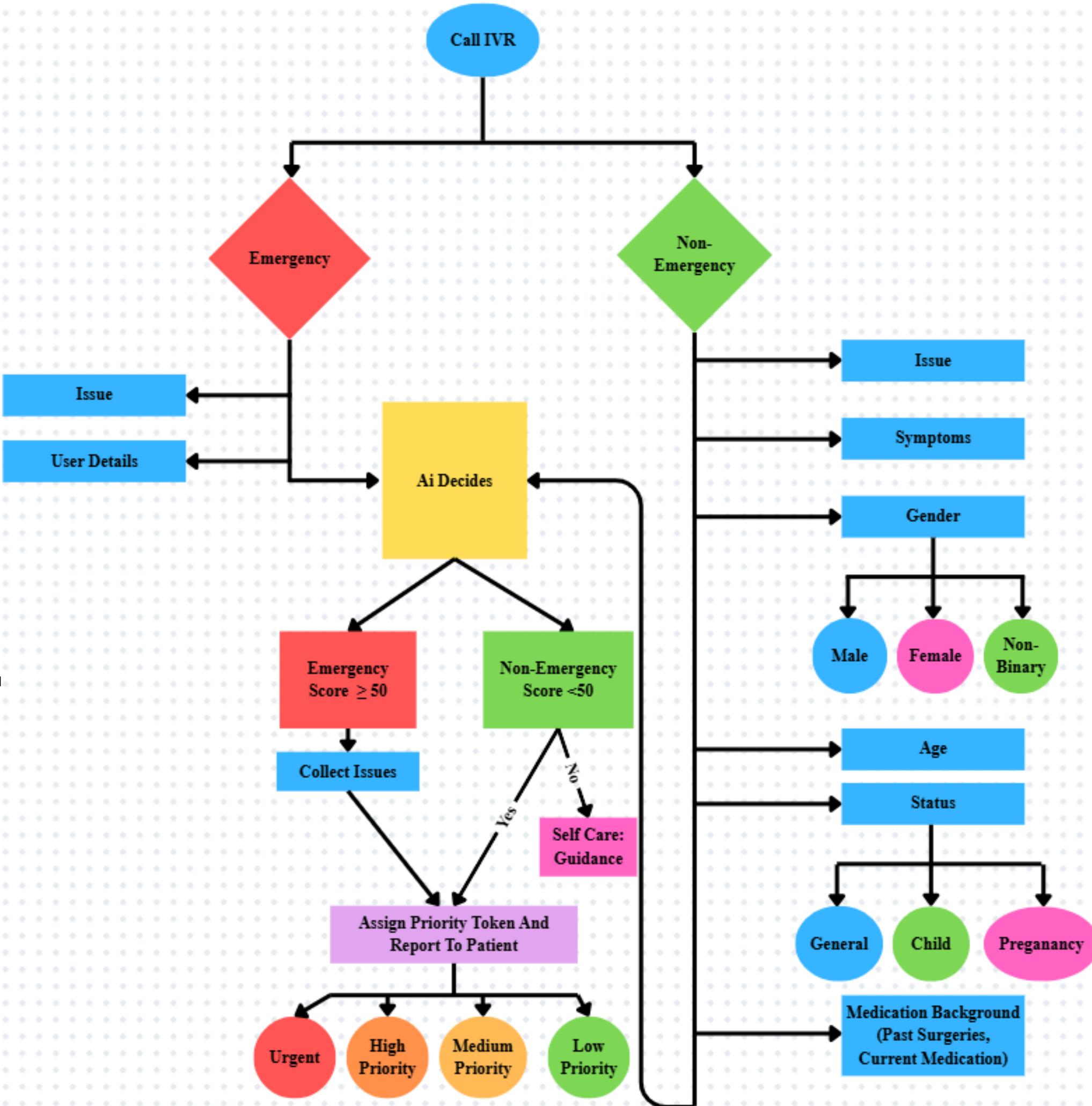
Universal Accessibility: Works via Voice (Tamil/Hindi) and Offline SMS/IVR for low-connectivity areas.

## Solution # 5

Explainable Care Pathway Reports: Converts symptoms into a clear urgency report that explains why care is needed and directs patients to the correct specialist.



# FLOWCHART



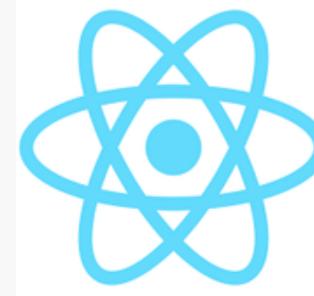
# TECH STACK

Technology stack used in the project where users call a particular number and tell their problem. The AI scores the emergency level, then shows a list of hospitals and doctors with user details and user details.

## FRONT-END:



HTML & CSS

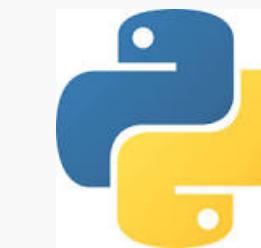


REACT



MATERIAL UI

## BACKEND:

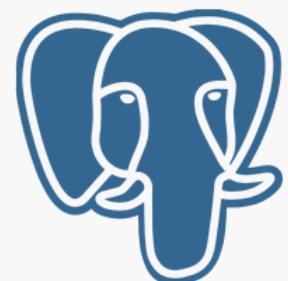


PYTHON



FAST API

## DATABASE:



PostgreSQL

SQL

## AI/ML:



OPEN-AI



FLASK



LangChain

LANG CHAIN

## API'S/SERVICES:



TWILIO



GOOGLE MAP API

# IMPACT FOR PATIENTS

- **Zero Ambiguity:** Eliminates guesswork by providing precise medical direction ensuring patients know exactly where to go.
- **Optimizes Scarce Staff:** Prioritizes critical cases instantly, preventing small rural clinics from being choked by non-urgent crowds
- **Lower Costs:** Saves money by identifying minor ailments that can be treated locally, avoiding expensive and unnecessary travel to city hospitals
- **Offline Access:** Ensures universal access via SMS and IVR for non-smartphone users, bridging the digital divide in rural areas.

# IMPACT FOR PATIENTS

- **Pre-Arrival Readiness:** Alerts trauma teams 15+ minutes in advance for critical cases, ensuring immediate action upon arrival
- **Resource Optimization:** Frees doctors to focus on serious patients by automatically filtering out minor cases, maximizing medical efficiency.
- **Smart Token Prioritization:** Replaces chaotic physical lines with digital Red/Yellow/Green tokens, allowing doctors to instantly identify and treat critical patients first..
- **Automated Triage:** AI handles the repetitive "screening" questions, reducing nurse burnout.

# BENIFITS PUBLIC HEALTH

- **Golden Hour Protection:** Drastically improves survival rates for strokes and trauma by eliminating pre-hospital delays.
- **Epidemic Early Warning:** Identifies disease clusters in real-time (e.g., Dengue outbreaks), enabling rapid containment before they spread.
- **Standardized Care:** eliminates dangerous guesswork by applying high-quality, uniform triage logic to every patient, everywhere.



# BENIFITS SYSTEMIC CHANGE

- **Data-Driven Policy:** Generates granular health data to guide government funding and specialist allocation where they are truly needed
- **Behavioral Shift:** Transforms rural healthcare culture from reactive "emergency-only" visits to proactive, managed wellness.
- **Plug-and-Play Architecture:** A modular add-on that upgrades existing rural clinic systems without requiring expensive hardware overhauls.



# Conclusion

Transforming Rural Healthcare We are shifting rural medicine from "Reactive Chaos" to "Proactive Logic." By replacing first-come-first-served lines with AI-driven Triage (Red/Yellow/Green) and a real-time "Hospital Handshake," we ensure critical patients survive the "Golden Hour." Built on a Zero-Cost, Offline-First Python architecture that speaks 6 local languages, this system proves that life-saving innovation is feasible, scalable this system empowers every village health worker to act with the precision of a specialized hospital.

