CODECELL - CMPN, VESIT

SYRUS HACKATHON 2025

Category Code: C4

Problem Statement Title: InsurAI - Smarter Policies, Faster Claims, and Fraud Protection

Team Name: .env

Institute Name: Vivekanand Education Society's Institute of Technology

Idea / Approach details

Problem :

The insurance sector struggles with **inefficient risk assessment, static pricing models, and fraud detection challenges**. Insurers **lack demographic-driven recommendations for personalized policies and real-time parametric triggers** for dynamic pricing.

Autonomous claims processing is needed to reduce fraud and compliance issues, while AI-driven insights can optimize pricing, detect underperforming policies, and enhance risk profiling. Advanced AI solutions can streamline operations, mitigate risks, and improve customer engagement.

Implemented Features

1. **Demographic-Driven Recommendations -** Identifies untapped customer segments (age/location/occupation) and recommends tailored insurance products using clustering and Gen AI insights.
2. **Real-Time Parametric Triggers -** Dynamically adjusts coverage and pricing using real-time data also analyze the behavioral patterns. This ensures adaptive risk management and personalized policy oerings.
3. **Autonomous Claims & Fraud Detection -** Automated claims processing by analyzing claim documents to Detects potential fraud, ensures compliance, and generates an underwriting summary for ecient decision-making.
4. **Chatbot for Insights -** Answers strategic queries (e.g., “Which policies are underperforming?”) with natural language queries from company data. Additionally, It compares market trends to optimize pricing and recommend competitive insurance rates.

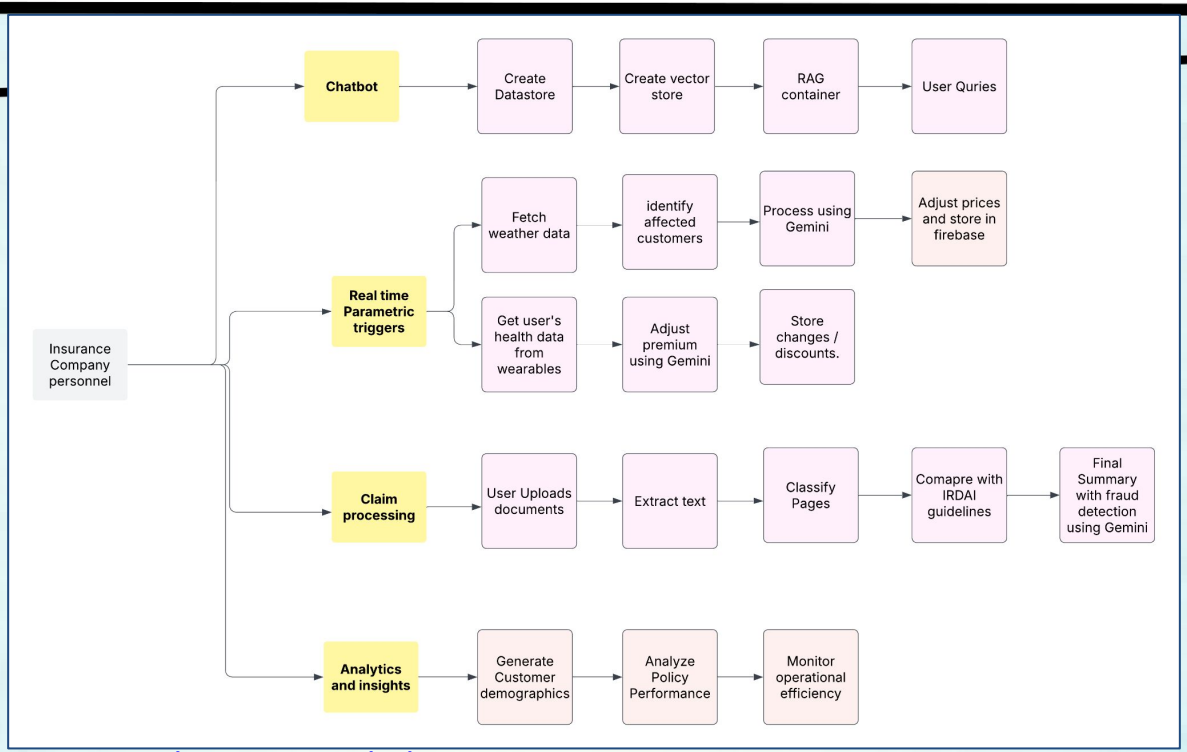
Innovation and Teach stack

Autonomous Claims Processing – Since claim document is a tedious task ao autonomous claim processing will Enhances fraud detection and streamlines claim approvals by cross-verifying treatments with injuries or surgery reducing manual intervention.

Dynamic Risk Management – Implements real-time parametric triggers to adjust coverage and pricing instantly based on natural disasters, health metrics, and market trends.

Techstack :
Frontend : React JS
Backend : Python, Flask / FastAPI, Uptiq
APIs : OpenWeather API, Gemini,
Database : Firebase, MongoDB

Flow diagram / Architecture



https://docs.google.com/document/d/1fPQrNFWIAjhBeFarG0BE8zfYT74VIS0f_JlihpdfmYo/edit?usp=sharing

Video Presentation Link

Video demo

Future Objectives

Blockchain for Claims Transparency

- Leverage blockchain to create immutable records of claims and policy adjustments.
- Enable smart contracts for instant policy validation and fraud prevention.

AI-Driven Parametric Relief Funds (Automated Payouts in Disasters)

- Use AI + IoT + Smart Contracts to create real-time insurance relief funds.
- Automatically trigger payouts before disasters impact customers.