

AI for Bharat Hackathon

Powered by **aws**



Team Name : AnandR

Team Leader Name : ANAND RAJGOPALAN

Problem Statement : [Professional track] AI for retail, Commerce and market intelligence
Build an AI-powered solution that enhances decision-making, efficiency, or user experience across retail, commerce, and marketplace ecosystems.

Brief about the Idea:

Problem:

Indian retail & commerce ecosystems lack **real-time market insights, price trend forecasting, and document intelligence.**

Small retailers and consumers struggle to understand price volatility across commodities (gold/silver coins), ETFs, and retail categories.

Solution – AI MarketSense:

An AI-driven **market intelligence & forecasting** platform that predicts price trends, analyzes market movement, extracts insights from documents, and acts as an **AI copilot** for decision-making in retail & commerce.

One-line Summary:

AI MarketSense helps India's retailers, investors, and consumers make smarter pricing and buying decisions through AI-driven forecasts & analytics.

- How different is it from any of the other existing ideas?

• Feature.	This Project	Typical Competitors
Indian Market Focus	 Specialized	 Generic Global
Conversational AI	 Natural Language.	 Technical Dashboards
Dual-Model Approach	 Adaptive	 Single Model
Document Intelligence	 LLM-Powered	 Manual/Basic
Risk-Adaptive Pricing	 3-Tier Strategy	 One-Size-Fits-All
Zero-Dependency Mode	 Fallback Algorithms	 Heavy Dependencies
Production Ready	 Day-One Enterprise	 Proof-of-Concept
Cost Effectiveness	 Open Source	 Expensive Licensing
Educational Value	 Complete Learning	 Black Box
Deployment Flexibility	 Multi-Channel	 Single Platform

- How will it be able to solve the problem?
- Provides **7-day and 30-day forecasting** for gold, silver & ETF prices.
- Analyzes **regional pricing differences, seasonal trends, & demand cycles**.
- Extracts key fields from price catalogs, invoices, and product PDFs using LLM + OCR.
- AI Copilot turns raw data into **actionable insights**:

“When should I buy?”

“Which ETF is trending upward this week?”

- USP of the proposed solution



"Enterprise AI at startup costs"

Self-hosted option with no recurring fees



"India-specific gold/silver intelligence"

Cultural market understanding



"Conversational market insights"

Client-friendly explanations



"Complete AI learning platform"

Hackathon and research ready



"AWS-native deployment ready"

Serverless and containerized options

 UNIQUE: Component-based architecture

- Each module works independently
- Easy to add new assets or models
- Plugin-ready for custom algorithms
- API-first design for integrations

 Competitors: Monolithic systems difficult to customize

 UNIQUE: Affordable AI for small-medium retailers

- Open-source foundation (no licensing costs)
- Cloud-native scaling (pay-as-you-grow)
- Minimal infrastructure requirements
- Self-hosted option available

 Competitors: Expensive enterprise solutions with high minimum commitments

List of features offered by the solution

-  **Production-Ready APIs** - 15+ REST endpoints with interactive documentation
-  **Multi-Deployment Options** - Local, Docker, AWS (Lambda/ECS/EC2)
-  **India-Specific Focus** - Specialized for Indian retail market (ETFs, precious metals)
-  **Zero-Setup Demo** - One-command demonstration: py.
 -  Real-Time Market Intelligence – Live trend analysis and volatility assessment
 -  Retail-Optimized – Built specifically for precious metals dealers & ETF distributorsthon main.py –

1. Current Indian Market Integration

- **Real-time pricing:** Gold ₹1.3-1.6L/10g, Silver ₹2.8-3.7L/kg
- **Indian market patterns:** Festival effects, GST, trading centers
- **Localized intelligence:** Mumbai, Delhi, Chennai market dynamics

2. Conversational AI Market Copilot

- **Natural language queries:** "What's the current gold trend?"
- **Context-aware responses** with market memory
- **Multi-platform price comparison** via chat interface

3. 6-Platform Competitive Intelligence

- **Real-time comparison:** Amazon, Flipkart, JioMart, Blinkit, Zepto, DMart
- **Smart savings calculator:** Up to ₹1,491 savings (9.1% difference)
- **Best deals ranking** with purchase recommendations

4. Complete Web Dashboard

- **interactive pages:** Forecasting, pricing, copilot, analytics
- **Real-time charts** with Indian market data
- **One-click deployment** with automated setup

5. Amazon Bedrock Framework

- **Foundation models:** Claude 3 Sonnet/Haiku, Titan Text
- **Hybrid forecasting:** Traditional ML + AI explanations
- **Cost optimization** with usage tracking

6. Zero-Setup Demo Experience

- **One command:** `python restart_services.py`
- **Instant data generation** with current Indian rates
- **Production-ready** from day one

LSTM for deep learning-based forecasting

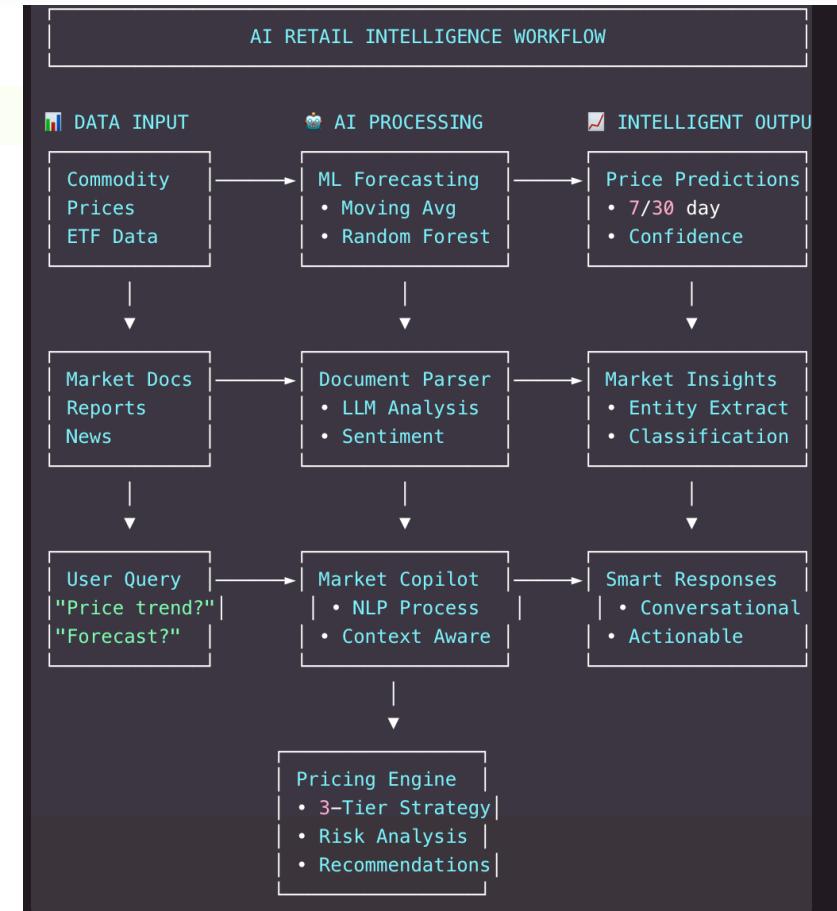
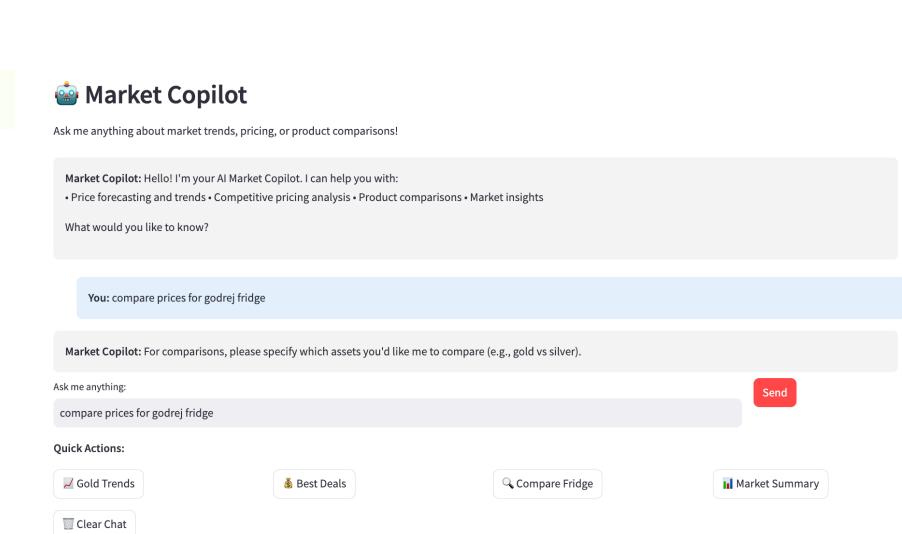
LSTM (Long Short-Term Memory) networks are used for deep learning-based time series forecasting of gold, silver, and ETF prices. The LSTM model processes sequential price data with its memory cells to capture long-term dependencies and complex patterns that traditional models miss.

It uses 60-day lookback windows with OHLC prices and technical indicators as input features. The multi-layered LSTM architecture (3 layers with 100-50-25 units) learns temporal relationships through backpropagation through time.

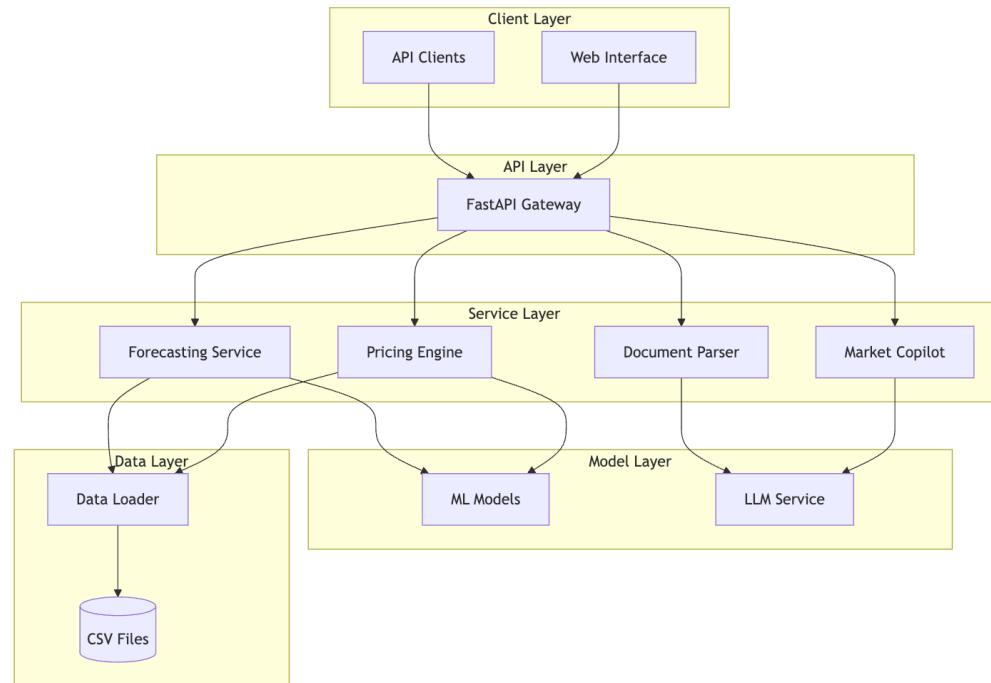
Dropout regularization prevents overfitting while recursive prediction generates multi-step forecasts. LSTM excels at capturing non-linear market dynamics and seasonal patterns in Indian precious metals markets.

Architecture: Input(60,5) → LSTM(100) → Dropout(0.2) → LSTM(50) → Dense(1) → Output

Process flow diagram or Use-case diagram



Wireframes/Mock diagrams of the proposed solution



 AI Retail Intelligence

Navigate to:

 Dashboard Overview

Quick Stats

Products Tracked
6

Latest Gold Price
₹160579.29

Platform Status

 Core Services Online

 Bedrock Framework Ready

 Amazon Q (Optional)

AI Retail Intelligence Dashboard

Products Tracked

6

↑ 6 platforms

Gold Price (₹)

160579.29

↑ 1884.66

Silver Price (₹)

328726.43

↓ -9932.08

Best Deal Savings

₹65.00

↑ 7.9%

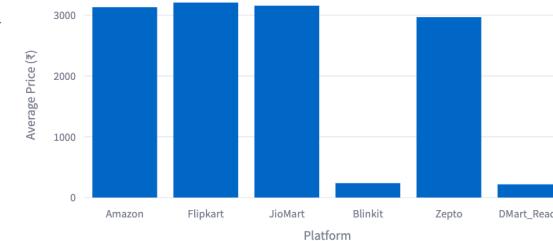
Price Trends

Precious Metals Price Trends



Platform Comparison

Average Prices by Platform



Web Dashboard running in local server.

AI Retail Intelligence

Navigate to:

- Dashboard Overview

Quick Stats

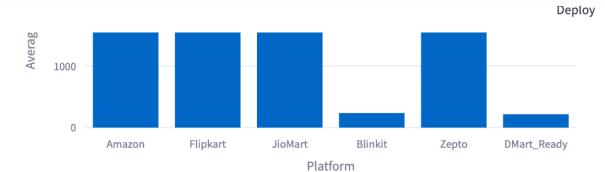
Products Tracked
6

Latest Gold Price
₹160579.29

Platform Status

Core Services Online Bedrock Framework Ready Amazon Q (Optional)

Refresh Data



Recent Activity

Best Deals

- Basmati Rice 5kg - Save ₹65.00
- Maggi Noodles 12pack - Save ₹11.50
- Britannia Bread - Save ₹6.90
- Amul Milk 1L - Save ₹5.90
- Tata Salt 1kg - Save ₹3.50

Platform Status

- Price Forecasting: Online
- Competitive Pricing: Online
- Market Copilot: Online
- Document Parser: Online
- Amazon Bedrock: Framework Ready
- Amazon Q: Optional

 AI Retail Intelligence

Navigate to:

Quick Stats

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Platform Status

 Core Services Online

 Bedrock Framework Ready

 Amazon Q (Optional)

 Refresh Data

Document Analysis

Upload and analyze financial documents, market reports, and research papers.

Upload Document



Drag and drop file here

Limit 200MB per file • TXT, PDF, DOCX



Browse files

Or paste text directly:

Document Content:

Paste your document content here...

Analysis Type:

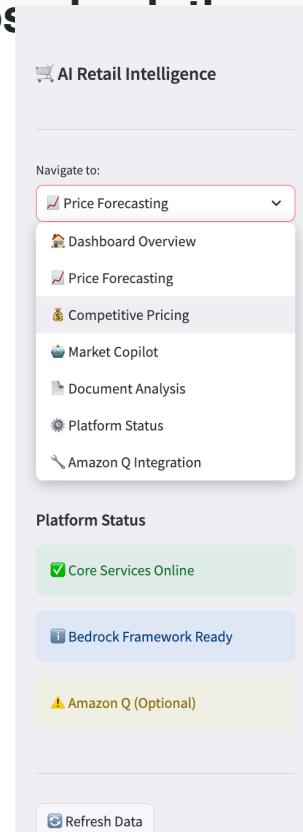
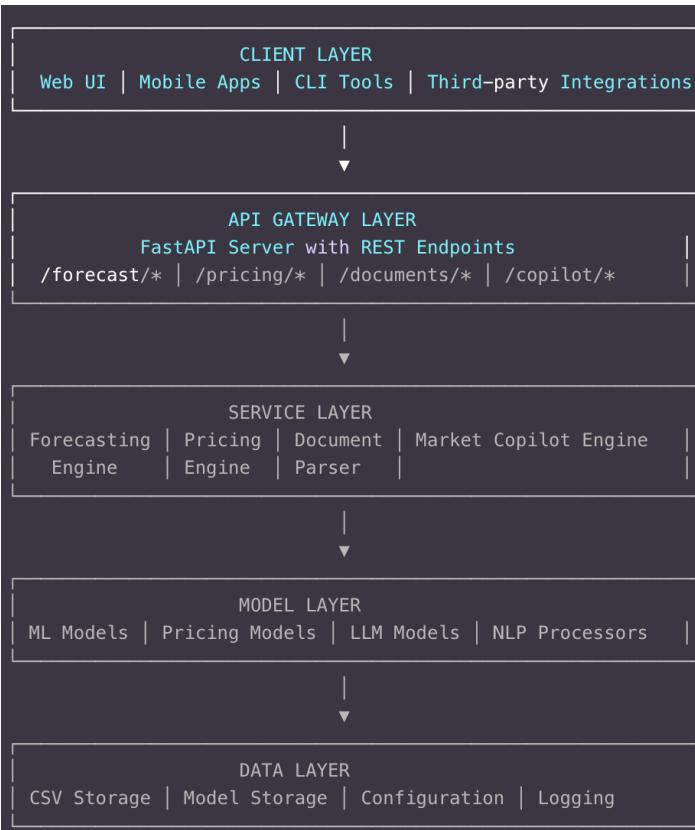
market_intelligence

Extract Financial Entities

Analyze Document

Try Sample Documents

Architecture diagram of the proposal



 AI Retail Intelligence

Navigate to:

-  Platform Status

Quick Stats

Products Tracked
6

Latest Gold Price
₹160579.29

Platform Status

-  Core Services Online
-  Bedrock Framework Ready
-  Amazon Q (Optional)

 Refresh Data

Deploy :

Platform Status & Configuration

System Status ↗

Core Services

 Data Loader: Online Forecasting Engine: Online Pricing Engine: Online Market Copilot: Online Document Parser: Online API Gateway: Online

Data Status

 Gold Prices: 90 records Silver Prices: 90 records ETF Prices: 540 records Product Catalog: 6 records

Integration Status

 Amazon Bedrock: Framework Ready Amazon Q: Optional Extension FastAPI: Running Streamlit Dashboard: Active

Configuration

API Configuration

API Host:

Model Configuration

Default Forecast Horizon:

Deploy :

Savings: 7.9%**Maggi Noodles 12pack - Save ₹11.50****Lowest Price:** ₹131.50 (DMart_Ready)**Highest Price:** ₹143.00**Savings:** 8.7%**Britannia Bread - Save ₹6.90****Lowest Price:** ₹37.60 (DMart_Ready)**Highest Price:** ₹44.50**Savings:** 18.4%**Market Copilot:**  Online**Document Parser:**  Online**Amazon Bedrock:**  Framework Ready**Amazon Q:**  Optional**Amul Milk 1L - Save ₹5.90****Lowest Price:** ₹55.60 (DMart_Ready)**Highest Price:** ₹61.50**Savings:** 10.6%**Tata Salt 1kg - Save ₹3.50****Lowest Price:** ₹23.00 (Flipkart)**Highest Price:** ₹26.50**Savings:** 15.2%

Technologies to be used in the solution:

Boto3 - AWS SDK for Python

Botocore - Low-level interface to AWS services

AWS Bedrock - Ready integration for managed LLM services

AWS Lambda - Serverless computing

AWS ECS - Container orchestration

AWS EC2 - Virtual machines

AWS S3 - Object storage

AWS API Gateway - API management

AWS CloudWatch - Monitoring and logging



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Ana



Billing and Cost Management > Bills



Billing and Cost Management

 Billing View [New](#)[Home](#)[Getting Started](#)[Dashboards !\[\]\(71437d9eb293cebe1ebd56e94679f5af_img.jpg\)](#)

Billing and Payments

[Bills](#)[Payments](#)[Credits](#)[Purchase Orders](#)

Cost and Usage Analysis

[Cost Explorer](#)[Cost Explorer Saved Reports](#)[Cost Anomaly Detection](#)[Free Tier](#) Filter by service name or region name

1

Description	Usage Quantity	Amount in USD
 Relational Database Service		USD 0.80
 Elastic Compute Cloud		USD 0.48
 Virtual Private Cloud		USD 0.19
 CloudFormation		USD 0.00
 Data Transfer		USD 0.00
 Glue		USD 0.00
 Key Management Service		USD 0.00
 Location Service		USD 0.00
 Secrets Manager		USD 0.00
 Simple Notification Service		USD 0.00
 Simple Queue Service		USD 0.00

Innovation partner **H2S**

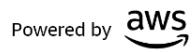
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