Team Name: GaramMasala
Vanshika (Team Leader)
Smriti Doneria
Ayush Amin

Guidelines

Please follow the format below :

a) Problem statement and define scope of your innovation

b) Working backwards from customer and define who is your customer

c) What are your success metrics and what's the impact of your solution

d) Scope for scalability and marketplace domain expansion

e) Architecture

f) Others (if any)

Theme - Enhanced Fire TV Experience

Develop a personalized content recommendation engine for Fire TV that considers mood, past behavior, and time of day. Create innovative social features for shared viewing experiences. Focus on AI-driven content recommendation and social watching across OTT platforms

Problem statement and define scope of your innovation

Problem Statement:
With the exponential growth of OTT content, users often feel overwhelmed by the abundance of choices available on platforms like Fire TV. Traditional recommendation systems rely heavily on watch history or popularity, neglecting the contextual, emotional, and social dimensions of content consumption. This leads to poor personalization and reduced engagement.

Scope of Innovation:
We aim to develop a multi-modal, context-aware, AI-driven recommendation engine for Fire TV that merges various data sources—keystrokes, voice, mood, weather, time, IMDb reviews, past behavior, and social interaction—to deliver hyper-personalized content suggestions.
Innovative social features like watch parties, sentiment-based watchlists, and group mood analysis set our system apart from traditional recommender engines.

Working backwards from customer and define who is your customer

Primary Customers & Needs

Individual OTT Viewers
- Seek fast, mood/time-based suggestions
- Prefer minimal effort, voice-first interfaces
- Often watch during meals, breaks, or routines

Group Viewers (Family/Friends)
- Want content matching mixed preferences
- Use watch parties, shared playlists
- Prefer social, casual viewing experiences

Non-Technical Users
- Prefer simple UIs and voice commands
- Need curated, easy-to-understand suggestions

OTT Providers
- Aim to boost engagement & reduce churn
- Want smarter, emotion-aware discoverability

Customer Needs

Relevant Recommendations
Match mood, time, and personal preferences (e.g., “Friday night comedy”).

Faster Decision Making
Reduce browsing with curated, high-precision picks.

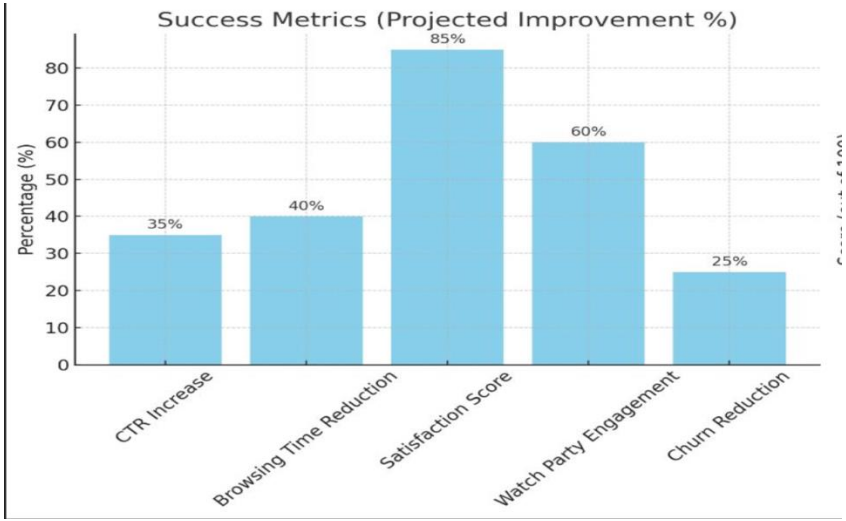
Voice + Emotion Recognition
Understand not just *what* is said, but *how* (tone, stress, intent).

Personal & Group-Friendly
Balance personal and shared viewing for watch parties or families.

Cross-Device Sync
Keep recommendations consistent across Fire TV, mobile, and desktop.

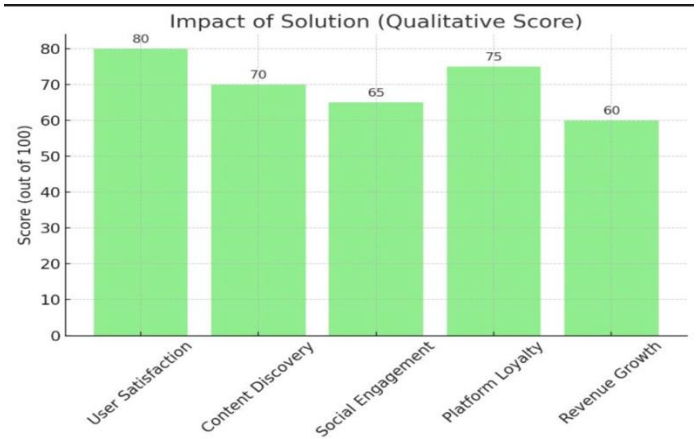
What are your success metrics and what's the impact of your solution

Success Metrics (Projected Improvements)
CTR Increase: Expected +35% more content clicks due to better targeting
Browsing Time Reduction: 40% less time spent searching for content
Satisfaction Score: Projected average user rating of ~85% post-watch
Watch Party Engagement: 60% increase in usage of shared features
Churn Reduction: 25% lower unsubscribe or inactive user rate



What are your success metrics and what's the impact of your solution

Impact of Solution
User Satisfaction: Elevated experience leads to loyalty
Content Discovery: Users watch more and explore new genres
Social Engagement: Improved shared experience through mood-aware group suggestions
Platform Loyalty: Users more likely to stick to Fire TV over competitors
Revenue Growth: More active users = more opportunities for ad and subscription revenue



Scope for scalability and marketplace domain expansion

Scalability Potential:

Can be deployed across different smart TVs and streaming devices
Scalable to other user experiences like mobile apps, tablets, and browsers
Extensible to recommend games, podcasts, or live TV events
Plug-and-play design allows different OTTs (Netflix, Prime, etc.) to adopt the engine

Marketplace Expansion:

Cross-sell AI recommendation engine to OTT vendors, cable providers, and Smart TV manufacturers
Expand to **edutainment**, **sports**, and **news** segments with context-aware suggestions
Integration with smart home ecosystems (e.g., Alexa routines recommending content)

Architecture

1. Input Modalities

Voice Input Module → NLP layer to detect emotional tone, content type (e.g., "funny movie", "chill music")
Keystroke Logger → Lightweight client-side module tracking navigation pattern
Face or Mood Detection (optional, with consent) → Emotion classifier via webcam or mobile app integration
Watch History Tracker → Extract genres, duration, completion rates
Weather API → Real-time weather data injection
Day/Time Contextual Module → Time-of-day/week based filtering
IMDb Review Analyzer → Sentiment-weighted rating filtering
Social Graph Engine → Recommend based on friends' activity, watch parties

Architecture

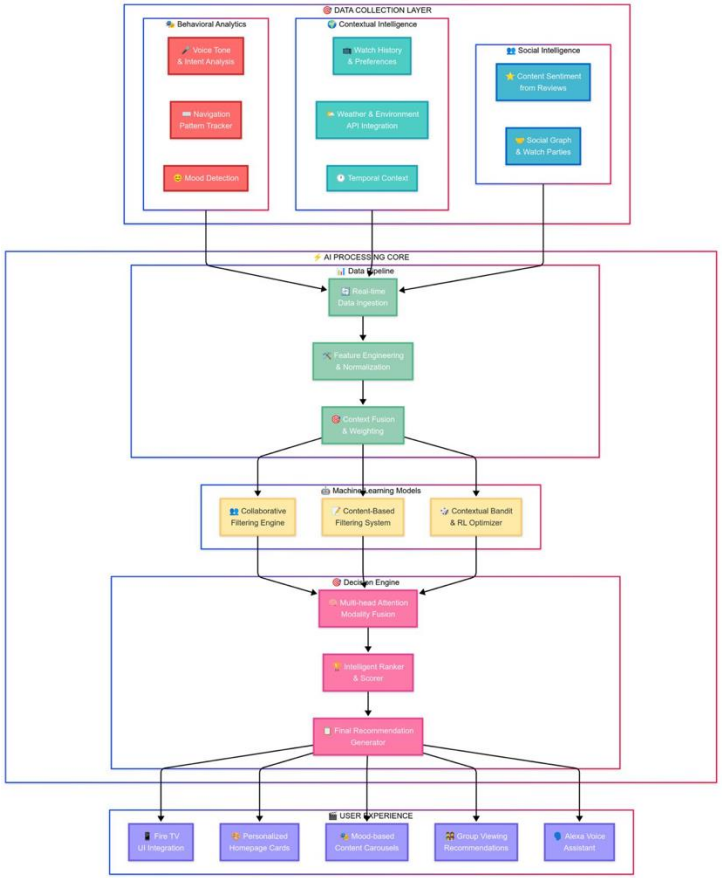
2. Core Recommendation Engine

Hybrid Model Approach:
Collaborative Filtering → Matrix factorization or neural CF for user-item interactions
Content-Based Filtering → Metadata and sentiment-based scoring
Contextual Bandit or Reinforcement Learning → For real-time adaptation
Multi-head Attention Network → To weigh and prioritize modalities
Model Pipeline:
Data Ingestion → Feature Engineering → Context Fusion → Ranker → Final Recommendation

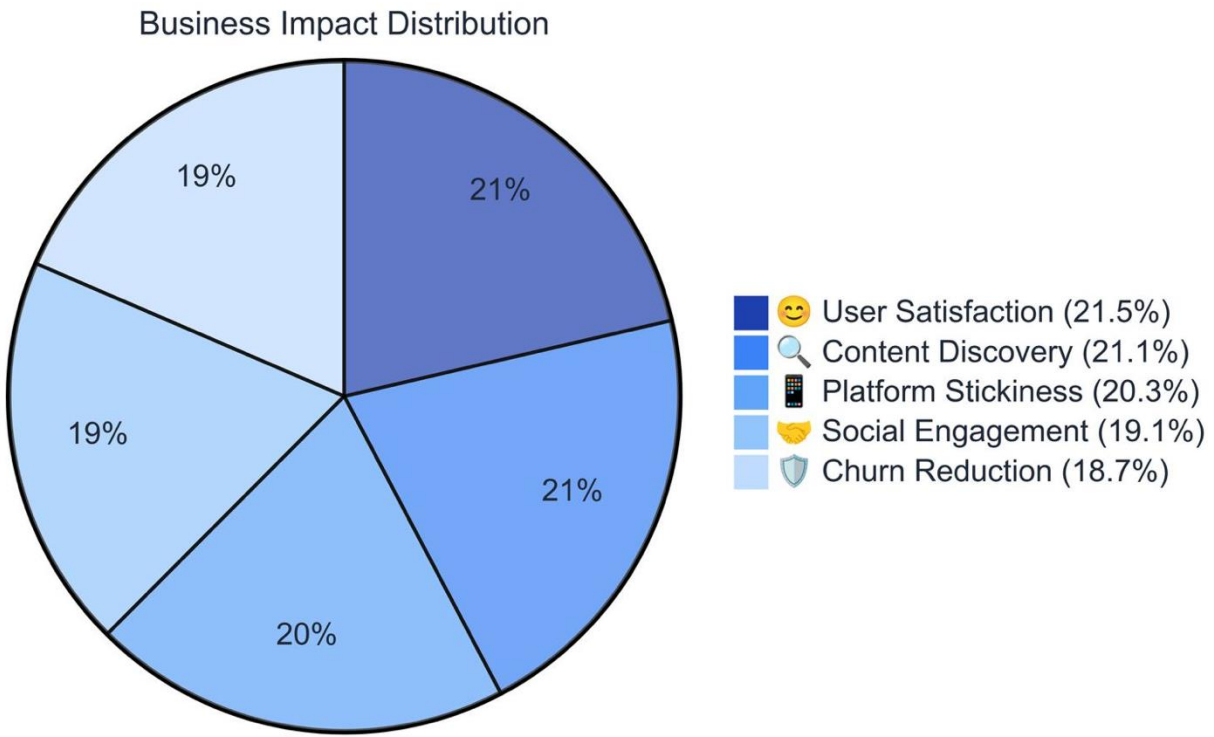
3. Output Module

Fire TV UI Widget Integration
Personalized Homepage Cards
Mood-based Carousels (e.g., "Movies for a Chill Evening")
Group Recommendation Panel for watch parties
Voice Assistant Integration ("Alexa, recommend me something funny")

Architecture Flow Chart



Business Impact Distribution



Key Performance Metrics