

SOFTWARE REQUIREMENTS DOCUMENT (SRD)

Project: The Insight-Sphere

AI-Powered Trend Intelligence, Sentiment Analysis & Personalized Learning Platform

1. PURPOSE

This document defines the functional requirements, system architecture, technology stack, and development approach for The Insight-Sphere.

2. PROJECT GOALS

The platform aims to identify trends, analyze audience opinion, and generate personalized learning paths using YouTube data and AI.

Primary objectives include content trend discovery, public sentiment analysis, and adaptive learning path creation.

3. TARGET USERS

Content creators, marketers, self-learners, and educators.

4. TECHNOLOGY STACK

Frontend: React, TypeScript, Tailwind CSS Backend: Python (FastAPI/Django) Vector DB: Pinecone/ChromaDB AI: OpenAI, Gemini, Claude NLP: spaCy, NLTK API: YouTube Data API v3

5. SYSTEM ARCHITECTURE

Frontend → API Gateway → Supervisor AI → Worker Agents → AI APIs / YouTube / Vector DB

6. MULTI-AGENT DESIGN

Supervisor Agent orchestrates requests and delegates to specialized agents.

Trend Agent: Identifies viral content gaps. Opinion Agent: Extracts emotions and arguments. Skill Agent: Builds learning paths and quizzes.

7. CORE FEATURES

TrendSleuth: Discover trending topics. OpinionForge: Analyze sentiment and debates. SkillBridge: Build structured learning paths.

8. USER INTERFACE

Dashboard-style layout with three main modules. Visual charts, skill trees, and analytics-driven UI.

9. BACKEND STRUCTURE

/app /agents /api /services /models /storage config.py main.py

10. DEVELOPMENT PHASES

Phase 1: Infrastructure Phase 2: AI Agents Phase 3: UI Development Phase 4: Optimization

11. STARTUP STEPS

Clone repo, setup env variables, install dependencies, run backend and frontend.

12. SECURITY

OAuth, API encryption, rate limiting, logging, GDPR compliance.

13. FUTURE SCOPE

Add social media platforms, team access, subscriptions, certification paths.