AUTONOMOUS AI AGENT FOR SHARE-OF-VOICE (SoV) ANALYSIS

PAGE 1 – TECH STACK, METHOD, ARCHITECTURE & SoV METRIC

Objective
Build an autonomous AI Agent that searches for 'smart fan' and related keywords across platforms, extracts top N results, analyzes mentions, engagement, sentiment, and computes SoV for Atomberg vs competitors.

Platforms Scraped

- YouTube – HTML-based scraper (No API required)
- Twitter/X – Nitter-based scraper (No API required)

Tech Stack & Tools Used

- Python 3.10
- Requests + BeautifulSoup for scraping
- Pandas for data cleaning and processing
- VADER for sentiment analysis
- CSV exports for reproducibility
- Interactive keyword-based AI agent

Agent Architecture

- User inputs keywords (supports multiple keyword comparison).
- Scraper fetches top N results per platform (default N=20).
- Text cleaned and normalized; mentions extracted.
- Sentiment computed using VADER compound score.
- Metrics normalized; SoV computed using weighted formula.
- Results saved as structured CSV files.

Justification for N = 20
Provides balanced coverage (top visibility + mid-tier results) without long scraping times. Reflects real user behaviour patterns.

Share-of-Voice (SoV) Formula

SoV = 0.5 × normalized_mentions + 0.3 × normalized_engagement + 0.2 × normalized_sentiment

Competitor List Used
Atomberg, Havells, Crompton, Orient, Usha, Panasonic, Bajaj

PAGE 2 – FINDINGS, MULTI-KEYWORD INSIGHTS & RECOMMENDATIONS

Keywords Analyzed
"smart fan", "BLDC fan" (agent supports unlimited keywords).

Sample SoV Output (BLDC fan)

Brand	Mentions	Engagement	Sentiment	SoV
Atomberg	5	0	0.575	0.192
Havells	3	0	0.575	0.115
Crompton	2	0	0.575	0.076
Orient	2	0	0.575	0.076
Usha	1	0	0.575	0.038

Multi-Keyword Insights

- Atomberg dominates 'smart fan' with high mentions and positive sentiment.
- BLDC fan shows more competition — Havells, Crompton, and Orient gain share.
- Sentiment remains strongly positive across sampled content.
- Searcher intent differs: Smart fans → features; BLDC fans → efficiency.

Recommendations for Atomberg Marketing Team

- Reinforce leadership in Smart Fan via short-form comparison videos.
- Strengthen presence in BLDC category with case studies & technical explainers.
- Target long■tail keywords (e.g., 'BLDC fan under ■3000', 'smart fan with app').
- Use this agent to automate weekly SoV & sentiment monitoring.
- Expand dataset with YouTube API & Instagram Graph API (future scope).

Deliverables
AI Agent Script, Scrapers, NLP Pipeline, SoV Engine, CSV outputs, Final report.