

## NebulaByte AI Consultation - Web Search and ArXiv Integration

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### Web Search Agent Implementation:

The Web Search agent will provide real-time information retrieval capabilities. The implementation plan includes:

1. API Integration: - Primary: SerpAPI for comprehensive search results - Fallback: DuckDuckGo Instant Answer API - Rate limiting handling with exponential backoff
2. Result Processing: - Snippet extraction and summarization - Source credibility assessment - Duplicate result filtering

### ArXiv Agent Implementation:

The ArXiv agent will focus on academic paper retrieval:

1. Data Sources: - ArXiv API for recent papers - Hugging Face datasets as backup
2. Paper Processing: - Title and abstract extraction - Author and publication date parsing - Category classification
3. Response Formatting: - Concise paper summaries - Direct links to full papers - Citation information