

Google AI Mode Optimization: I Analyzed My Website with Query Fan-Out Technique - What Did I Learn?

Metehan Yesilyurt

AI Search & Information Retrieval Researcher · metehan.ai

Published: May 26, 2025 · Canonical: <https://metehan.ai/blog/google-ai-mode-optimization-query-fan-out/>

Google showcased its capabilities across many areas during the I/O event on May 20-21, demonstrating just how ambitious they are. I loved it. One of the innovations announced at this event was the release of Google AI Mode to everyone in the US. I posted on LinkedIn asking myself whether "optimizing for this would bring us incredible traffic?" and expressed my uncertainty.

Of course, I wanted to dive a bit deeper, and after Claude 4 models were announced yesterday, I set out to see if I could come up with some ideas by including this aspect as well.

Update: You can now examine the tool through Hugging Face by entering your own Claude API key. <https://huggingface.co/spaces/metehan777/query-fan-out-tool>^[1]

IMPORTANT WARNING Since the website I'm working on uses WordPress, I created the crawl schema based on wp-json. This means the script will work perfectly if you're using WordPress. You'll need to customize it for your CMS using ChatGPT, Claude, or Gemini.

I saw many posts mentioning Google's official announcement, but everyone was just sharing general comments - "liked and moved on" - so I decided to read it myself.

I noticed they mentioned "query fan-out": <https://developers.google.com/search/docs/appearance/ai-features>^[2]

They also shared a video, 34 seconds long. <https://www.youtube.com/watch?v=AnKaUXbwL20>

This is where things started to become clearer. There was a similar structure to what we know/have heard of as query rewriting. In fact, [Marie Haynes](#)^[3] had mentioned it before. Aleyda Solis published a great resources [here](#).^[4]

Now let's look at the screens from the video. [gallery ids="753,756,755,754"]

Now let's start with what Query Fan-Out is, using the Python script I developed. I analyzed my company's website. I'll share some search queries entirely in Turkish.

Query Fan-Out is a technique that Google's process of breaking down complex user queries into simpler, more focused sub-topics. When a user comes to AI Mode and starts their search journey with a comprehensive query like:

"How to create a profitable mobile app monetization strategy for 2025 that balances user acquisition and retention?"

The AI doesn't look for an answer in a single piece of content. Instead:

1. **It breaks down the query** - E.g.: "mobile app monetization strategies" - "2025 user acquisition strategies" - "balancing monetization with user loyalty"
2. **Scans content for sub-topics**
3. **Provides a coherent overview**

I interpret this as Google now preferring content structures where well-covered sub-topics are woven together like a network, rather than a single "pillar page."

Deep Diving into Query Fan-Out

Google's search experience is transforming with **AI Overviews** (formerly SGE) technology. I think we can agree on this. I wanted to understand where the website I'm working on stands in this new order by analyzing our content. I wrote a script in Python without a web interface that would output JSON using Claude 4 Opus.

I used Cursor for this.

Here's what I found in my analysis.

Analysis: Overview of the Site

- Complex user queries were identified
- Queries were broken down into sub-topics
- Existing content was evaluated against these topics
- Content gaps were identified
- Content depth and connections were analyzed
- Semantic clusters and potential hub pages were mapped

Key Findings

1. Breaking into Sub-Queries Really Works

- **Observation:** Complex queries were divided into 5-6 sub-topics
- **Finding:** Main topics were covered, but some important sub-topics were missing
- **Conclusion:** AI may prefer other sites for these missing sub-topics

2. Content Gaps = Risk + Opportunity

- **Observation:** Gaps in "ROI measurement" and "UX-focused monetization"
- **Finding:** Content directly answering specific questions is missing
- **Conclusion:** Missing topics directly impact AI visibility

3. Depth and Internal Links Are Vital

- **Observation:** 83 out of every 100 pieces of content were grouped as "orphan content" with no/weak internal linking for relevant AI Mode queries
- **Finding:** Content with high depth scores is in a stronger position
- **Conclusion:** Content should not just be long, but connected and contextual

4. Semantic Clustering and Hub Pages Are Missing

- **Observation:** 90 potential semantic clusters were detected
- **Finding:** Content lacks hub/spoke structure
- **Conclusion:** AI wants to see topic integrity and authority

5. Complex Queries Require Multi-Layered Answers

- **Observation:** Users and AI are looking for holistic solutions
- **Finding:** A combination of related content is needed, not just one piece
- **Conclusion:** Content that answers not just "what is X?" but also "how is X related to Y?" is needed

IMPORTANT WARNING Redesigning an entire website from scratch for query fan-out can cause fluctuations and drops in your current rankings. It's more sensible to use it in specific content clusters. -in my opinion-

Actionable Content Strategies for the AI Era

1. Focus on Long-Tail and Question-Based Keywords for Sub-Topics

E.g.: "mobile app profitability metrics", "how to balance monetization and UX"

2. Create Answer Clusters

- Identify main topics
- Break them down into sub-questions
- Create specific content for each sub-question

3. Consider Depth and E-E-A-T Criteria

- Cover "Who, what, why, when, how" questions
- Provide expertise, experience, authority, and trust signals

4. Use/Create Internal Links and Content Clusters

- Link sub-topic articles to each other and to a central hub page
- Ensure your site architecture makes sense to Google

5. Identify and Fill Content Gaps

- Analyze complex queries by breaking them into sub-topics
- Create strategic content for missing topics. This doesn't have to be just written content. It can also be YouTube, Instagram, TikTok platforms.

6. Cover the Entire User Journey

A user interested in "monetization" is probably also searching for "user retention" and "UA."

I'm also sharing some results from the JSON outputs.

- [!ai-mode-optimizasyonu-2](#)^[5]
- [!ai-mode-optimizasyonu](#)^[6]

Conclusion: Chase Authority, Not Rankings

Google's new AI search structure is more conversational and connected. For AI to break down and highlight your content:

✅ Be comprehensive ✅ Be connected ✅ Leave no gaps

This analysis showed me that it's time to focus not just on individual keywords, but on an entire topic ecosystem.

Tool source code: <https://github.com/metehan777/google-ai-mode-optimization-tool>^[7]

The Floor is Yours

Your comments are very valuable to me. I always believe in the power of sharing and learning something new.

Query fan-out is how Google AI Mode decides which pages to cite. For AEO teams this means covering an entire question cluster, not just the head query. AI citations in ChatGPT, Perplexity and Gemini follow the same fan-out logic - answer engine optimization is cluster work.

Generative engine optimization for Google AI Mode is query fan-out engineering. The cluster coverage generative engine optimization requires is exactly what AI Mode rewards.

REFERENCES & SOURCES

- [1] <https://huggingface.co/spaces/metehan777/query-fan-out-tool> — <https://huggingface.co/spaces/metehan777/query-fan-out-tool>
- [2] <https://developers.google.com/search/docs/appearance/ai-features> — <https://developers.google.com/search/docs/appearance/ai-features>
- [3] Marie Haynes — <https://www.mariehaynes.com/ai-mode-query-fan-out/>
- [4] here. — <https://www.aleydasolis.com/en/ai-search/google-query-fan-out/>
- [5] ai-mode-optimizasyonu-2 — <https://metehan.ai/wp-content/uploads/2025/05/ai-mode-optimizasyonu-2.png>
- [6] ai-mode-optimizasyonu — <https://metehan.ai/wp-content/uploads/2025/05/ai-mode-optimizasyonu.png>
- [7] <https://github.com/metehan777/google-ai-mode-optimization-tool> — <https://github.com/metehan777/google-ai-mode-optimization-tool>