Platform choice

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Chatbot Name: Cohora

1. Platform Options Considered

To ensure we selected the best infrastructure for Cohora's "Knowledge Graph" and "Shortest Path" features, we evaluated three distinct approaches:

Option A: Dialogflow CX (Google)

- **Overview:** A conversational AI suite that excels at slot-filling and intent detection.
- **Strengths:** Enterprise-grade NLP, easy integration with Google Cloud, and visual flow management.
- **Limitations:** It is a closed sources with tight limitation on extendibility. Implementing our core feature, dynamic graph traversal to find connections between students, would require complex webhooks, rendering the platform redundant.

Option B: Botpress / Voiceflow

- **Overview:** Low-code visual builders that allow for custom JavaScript execution and API calls.
- **Strengths:** Great UI for designing conversation flows and fast prototyping.
- **Limitations:** While better than Dialogflow, they still struggle with heavy data processing. Managing a Vector Database (for semantic search) and a Graph Database (for connection paths) simultaneously within these visual nodes results in complicated logic that is hard to debug and scale.

Option C: Custom Stack (LangChain + React [Tentative])

- **Overview:** A code-first approach using existing open-sources (or "*extendable*") frameworks to orchestrate the LLM, Vector DB, and Graph DB directly.
- **Strengths:** Absolute control over the architecture. Allows direct implementation of the "Shortest Path" algorithms and semantic ranking without platform constraints, as it allows arbitary code integration.
- **Limitations:** Higher initial setup time; requires building the UI and chat interface from scratch.

2. Selection Rationale & Decision Matrix

Selected Platform: Custom Stack (Code-First Approach)

We chose the **Custom Stack** because Cohora is not a standard FAQ bot, it is a retrieval engine. We need to fetch data from a Vector Store, cross-reference it with a Graph Database, and then synthesize an answer.

Standard platforms add an abstraction layer that restricts this specific multi-modal retrieval.

Decision Matrix:

Criteria	Dialogflow CX	Botpress	Custom Stack
Complex Logic Support (Graph + Vector)	2	3	5
NLP/AI Control	4	4	5
Ease of Use (Setup)	5	5	2
Scalability (Data volume)	3	3	5
Cost Efficiency	3	3	4
Integration Flexibility	3	3	5

3. Fit with Chatbot Purpose

Our chatbot, **Cohora**, is designed to map campus activity into a searchable knowledge graph to provide precise people-searches and shortest-path introductions4.

The core value proposition of Cohora is the ability to calculate "degrees of separation", *Who knows a guy who knows a guy?* This requires running graph algorithms (like `Dijkstra` or `A*`) in real-time.

A custom backend allows us to execute these algorithms directly on our database. A standard platform like Tidio or Landbot is designed for linear conversation flows (If X, say Y) and cannot handle the dynamic, non-linear query processing required to map social connections across the campus.