Project Proposal – Agentic Chatbot for Robotics Club

Project Brief

We are building an Agentic Chatbot for the Robotics Club to act as an intelligent assistant. It will answer technical questions, retrieve documents from Google Drive, send automated emails, assist with event registrations via Google Forms, provide reminders, track tasks, evaluate skills, conduct events, and generate data-driven results.

Our Approach

We will begin with a learning phase to master tools and concepts, then build an MVP with core Q&A and document retrieval. Next will be phased additions — Neo4j context graphs, agentic workflows, Google service integrations, task tracking, skill evaluation, and automated event conduct with evaluation.

The backend will use an MCP server implemented with FastMCP, a high-level Python framework for building Model Context Protocol servers. The project is planned for completion by the first week of December.

Features & Tools

Features	Tools / Skills Required
GPT-based Q&A chatbot	LangChain + OpenAI API
Document search (RAG)	ChromaDB + embedding + chunking
Context with graphs	Neo4j (simple member ↔ project models)
Agentic planning	LangGraph (2–3 tool steps max)
Send email notifications	Gmail API + Python
Share Google Form links	Pre-filled links / Google Forms API
Retrieve from Google Drive	Google Drive API
Event reminders	Hardcoded JSON / lightweight storage
Task tracking & skill evaluation	Neo4j skill mapping, logs, Pandas analytics
Event conduct & evaluation	Workflow scripts, judging metrics, Pandas analytics

Additional Tools:

- **FastMCP Server:** Implemented using FastMCP to handle structured tool integration and efficiently manage long-running agent workflows.
- **Utilities**: PyMuPDF/pdfplumber, dotenv, google-auth
- **Deployment:** GitHub, Render/GCP

📅 Phases & Timeline

Phase	Dates	Duration	Key Tasks
Phase 1 – Learning & Setup	10 Aug – 7 Sept	29 days	Learn LangChain, LangGraph, RAG, Neo4j basics, Google APIs; set up Git/GitHub & FastMCP skeleton
Phase 2 – MVP Build	8 Sept – 19 Sept	11 days	Basic Q&A with LangChain + OpenAI; Google Drive API; ChromaDB RAG; minimal testing
Phase 3 – Feature Expansion	27 Sept – 17 Oct	30 days (15 + 15)	**Sprint 1:** FastMCP server setup, Neo4j, Gmail API, Task tracking & skill evaluation module. **Sprint 2:** Google Forms integration, LangGraph workflows, Event conduct & evaluation module
Phase 4 – Optimization	November	10 days	Bug fixes, optimization, prompt tuning, API stability
Phase 5 – Final Testing & Docs	1st week after end-sems	7 days	End-to-end testing, documentation, deployment