

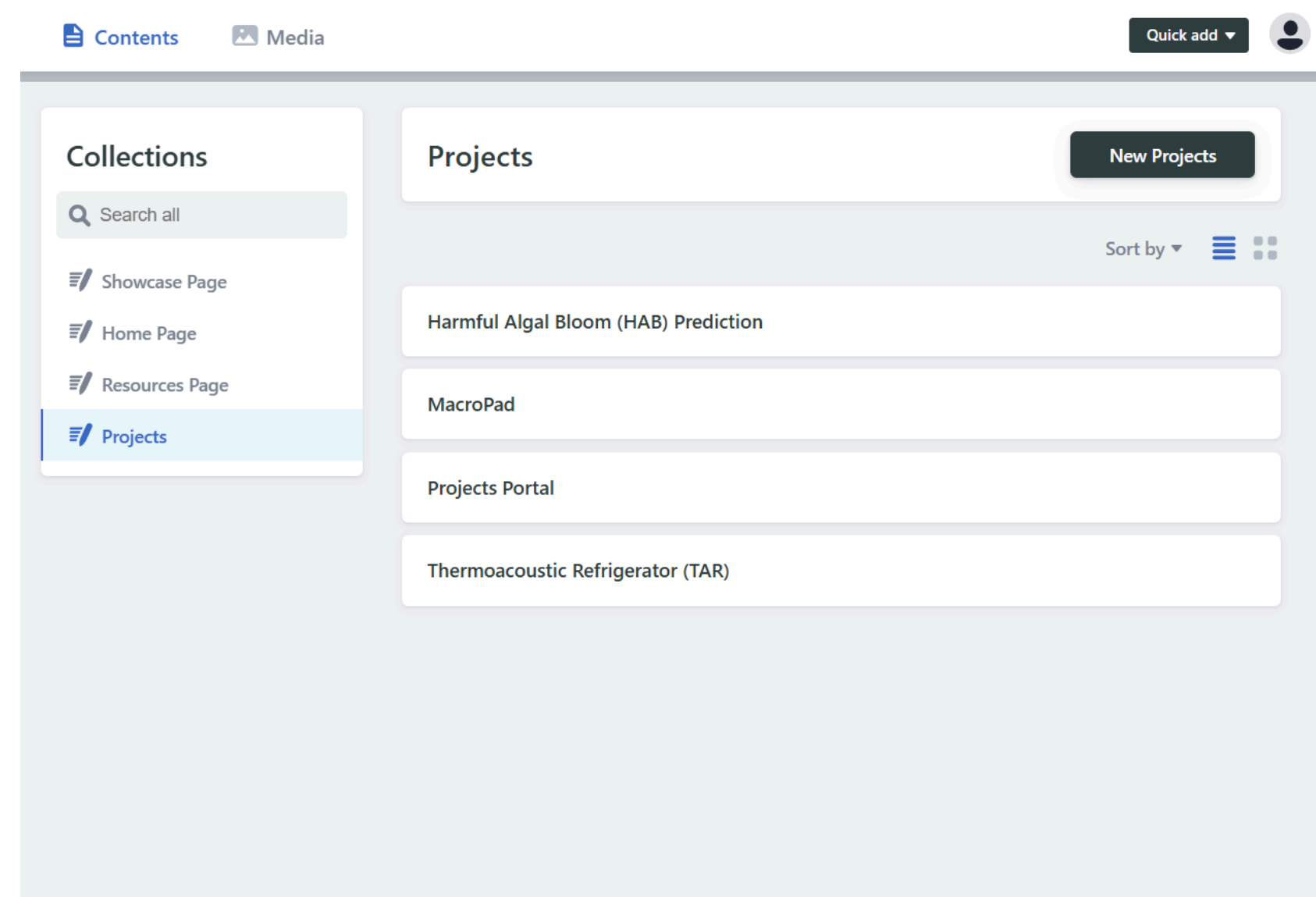


Project Overview

A web portal to showcase and discover student engineering projects, events, and resources for UCSD's HKN branch

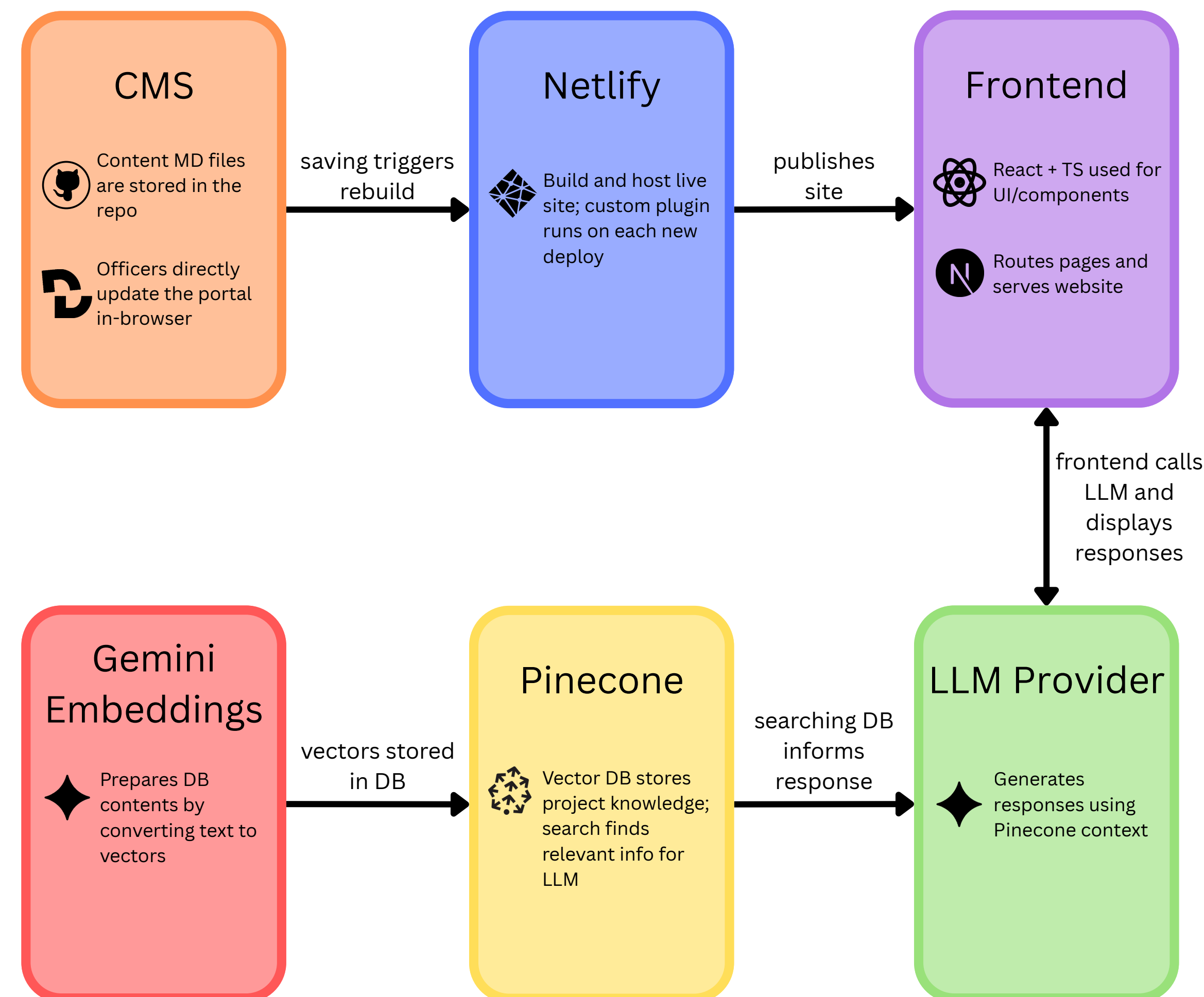
The HKN UCSD Projects Portal is a Next.js web application deployed on Netlify. To allow non-technical updates, it integrates Decap CMS for direct, browser-based editing that automatically saves to GitHub. The portal features "Ramsey," an embedded AI chatbot driven by a multi-LLM backend (Gemini, Claude, OpenAI) to provide accurate answers about HKN and projects.

Content Management System



Decap CMS gives the team a simple admin dashboard where they can edit and publish projects, alongside other content on the portal, without touching the codebase. When changes are published, the content is committed to GitHub and deploys to Netlify so the website updates automatically.

System Architecture and Tech Stack



Frontend:

- Next.js (App Router): Builds and serves the website
- React + TS: UI library for pages and components

Content and Source Control:

- GitHub: Stores all project write-ups, images, and site content; CMS saves end up in the repo
- Decap CMS: Content Management System; entirely browser-based editor so officers can update projects without writing code

Chatbot:

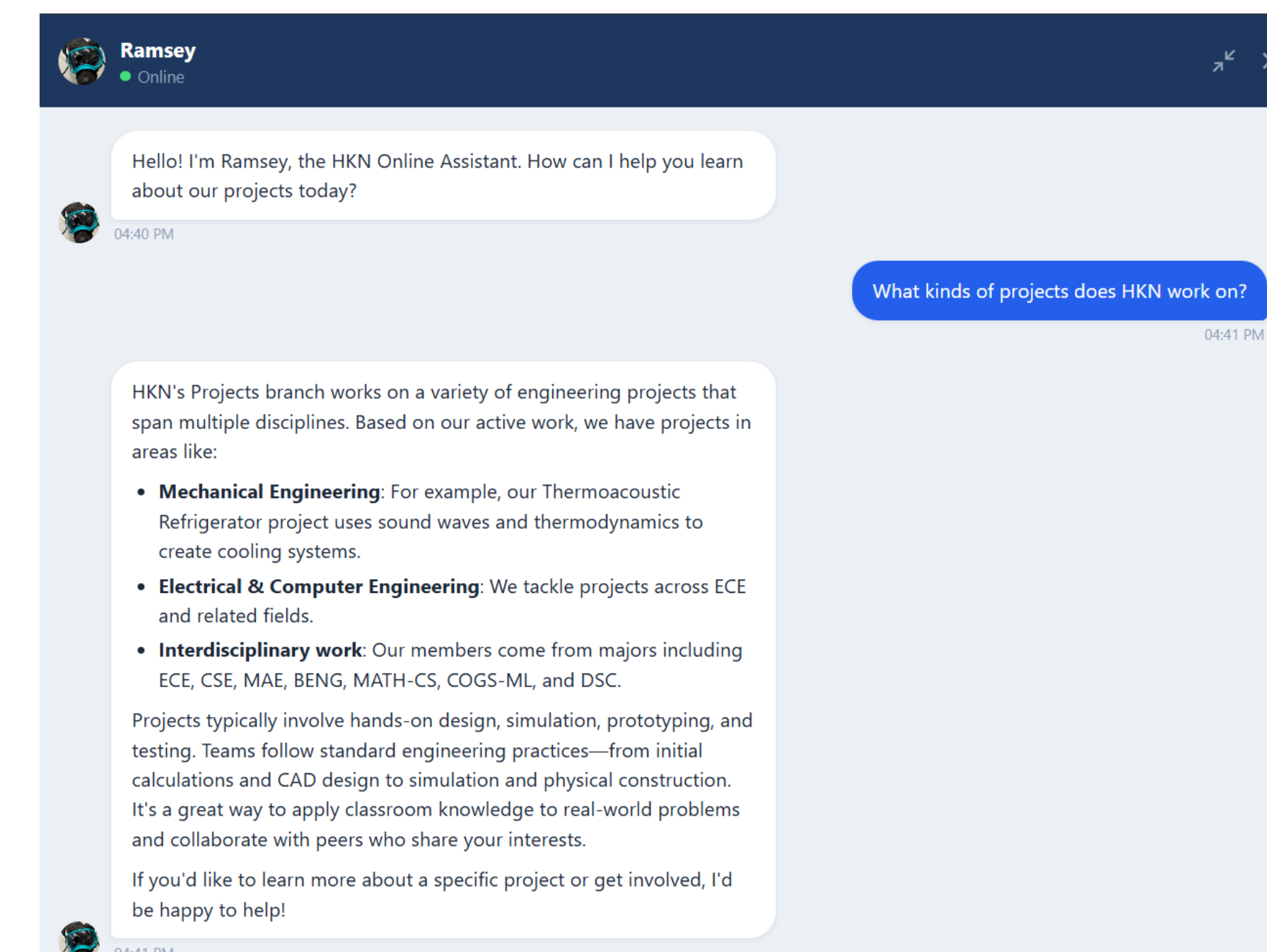
- Pinecone: Vector database that stores and searches project knowledge
- Gemini Embeddings: Converts project text into a searchable format for Pinecone
- LLM API: By default Gemini is used to respond to user queries using retrieved info, but settings exist to use Claude or OpenAI

Hosting:

- Netlify: Hosts the live site and automatically rebuilds when GitHub changes
- Netlify Build Plugin: Re-indexes project pages into Pinecone after each deploy to ensure chatbot knowledge base is current

Chatbot

Our chatbot, Ramsey, is designed to answer questions about the HKN organization **within a defined scope**. It has access to relevant information through RAG and can discuss HKN's projects, general membership eligibility, how to get involved, and events like Hard Hack and the induction process. It cannot provide specific event dates, officer contact details, or academic help, and will decline any questions unrelated to HKN. Ramsey **keeps responses capped** at ~150 words for simple questions and ~300 for complex questions. When Ramsey doesn't know something, it will direct the user to Discord, rather than guessing or hallucinating.



Live Website



hkn-projects.netlify.app