LEVL - AI Health Chatbot Interface & Longevity Knowledge Graph Expansion

Company Description:
LEVL is an AI longevity startup targeting the biology of aging to create novel nutraceutical formulations and personalized protocols to help people live longer, healthier lives.

By leveraging the tools of AI drug discovery to identify synergistic combinations of naturally derived ingredients, certain formulations are emerging that rival the potency of comparable pharmaceuticals without the side effects and regulatory timelines of traditional drug development. Our first Patented formulation using this process mimics fasting-induced cellular rejuvenation without the need for caloric restriction, and in our testing is comparable to the leading anti-aging pharmaceutical, Rapamycin.
We are commercializing these breakthroughs under the LIFESPAN+ brand to deliver foundational cellular support, tackling the root causes of age-related decline while providing immediate functional benefits of Energy, Sleep, Focus, Calm, etc.
Our companion app dynamically optimizes personalized longevity protocols based on users' biomarkers and qualitative feedback, effectively slowing their pace of aging.

Students will directly contribute to developing our open-source longevity knowledge graph, powered by the frontier of aging research and anonymized user data, to democratize anti-aging research in pursuit of LEVL's ultimate mission: Achieve Longevity Escape Velocity, and eliminate age-related disease.

Preferred Team Size: 3-5

Location: Remote - With virtual access to the team throughout the entire program

Project Summary:

Help build the intelligence layer behind LEVL's personalized, preventative, and performance-enhancing longevity protocols. This project combines a living Longevity Knowledge Graph—already seeded with relationships between ingredients, biological pathways, and health outcomes—with a conversational AI interface that makes that knowledge accessible, adaptive, and actionable.

Students will expand and refine the existing graph, then connect it to a research-grounded chatbot that explains protocols, answers health questions, and suggests evidence-based adjustments. Users might ask:

> "What can I do to improve muscle growth while in a fasted state?"

—and receive a clear, research-backed suggestion, personalized to their goals, preferences, and current stack.

You'll work at the intersection of frontier AI frameworks, health science, and user experience—shaping the system that helps every LEVL member understand *why* each protocol works, and how to optimize it in real time. You'll have wide latitude to improve the graph's structure, expand data sources, and influence how knowledge is represented, reasoned over, and delivered to end users.

Deliverables:

1	**AI Health Chatbot Interface**	Ship a secure, LLM-powered chat UX that answers questions, explains tradeoffs, suggest next steps, and add modalities on the user's behalf while A/B testing habit adoption and citing sources—grounded in the KG, with an included sanity check loop. Voice or text interaction. Select from multiple different coaching styles (i.e. Disciplinarion, or Friendly and supportive) Reuse existing design-system components from the Protocols Web App.
2	**KG Schema & Ingestion Pipeline**	Extend schema with entity-resolution (synonyms → canonical IDs) and contextual variables (time-of-day, dose timing, age cohort). Build automated literature-mining jobs that convert new research and LEVL outcome data into graph nodes / edges with provenance.
3	**Evidence Scoring & Provenance**	Attach strength/confidence scores and DOI-level citations to every edge; expose via GraphQL.
4	**User-Profile Matching Enhancements**	Improve the recommendation engine that maps user goals, biomarkers, and preference flags to KG interventions. Output ranked protocol suggestions and rationale. Preference Slider Interface: accept continuous inputs for budget, effort tolerance, risk aversion, side-effect sensitivity, and evidence rigor; persist per user
5	**Explainability & Citation Layer**	Return structured rationales (ingredient → pathway → hallmark) with numbered references in every chat or API response.
6	**Real-Time Sync & API Hooks**	Push KG updates to the Digital-Twin and Protocol Matching services via versioned REST / GraphQL endpoints and event topics defined in the LEVL Interface Contract v1.
7	**Admin & QA Dashboard**	Internal tool for scientists to review auto-ingested claims, flag errors, and approve "influencer-verified" protocol stacks.

Stretch Goals

- Automated paper summarization for rapid KG updates
- Paced Rollout Scheduler: introduce modalities at a reasonable interval; track adherence and evaluation window; automatically scale, pause, or retire modalities based on individual efficacy
- Rule-authoring GUI for scientists (no-code)
- Periodic open-source KG snapshot for community research

Scientific Relevance

This project converts thousands of cutting-edge longevity papers into a living, user-aware engine that tests interventions at human scale. By closing the loop between published science, in-app outcomes, and rapid protocol adjustment, it accelerates discovery of what truly slows—or even reverses—biological aging, setting a new standard for evidence-based wellness.

Desired Skill Set

Ideal candidates love connecting dots across science and code. We're especially keen on students who:

- Have Python chops for data processing and API work
- Know or want to learn Neo4j (or other graph databases) for modeling complex relationships
- Familiarity or desire to learn emerging AI large data tools, including RAG and MCP (Model Context Protocols)
- Are curious about large-language models and grounding them in structured knowledge
- Enjoy building clean APIs or chat interfaces and care about scientific rigor

If you bring curiosity, clear thinking, and a willingness to experiment, the specific tools can be learned on the fly.

Student Benefits:

1. Gain hands-on experience with frontier models, scientific literature parsing, knowledge graph construction, and health optimization. Gain experience with startup-style product thinking and stakeholder collaboration.
2. Enjoy creative freedom to design and solve open-ended, high-impact problems that push the frontiers of human life extension.
3. Each team will ship an independent, modular contribution with clear ownership and a path to public demo or open-source release.
4. Top-performing students may be invited to continue working with LEVL or be referred to partner startups in the healthtech and AI space.

5. Complimentary LIFESPAN+ products to improve sleep, boost energy & focus, and mitigate the effects of stress.

IP Rights:
Students will be asked to sign a proprietary information and intellectual property assignment agreement. Intellectual property rights to all code, data, and documentation will be retained by LEVL, Inc.

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