

LEVL - Pace of Aging Algorithm

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:

Objective:

To design and implement a modular, real-time biological age and pace of aging prediction engine that integrates multi-modal health data (blood biomarkers, wearables, DNA Methylation, digital metrics, and qualitative inputs). This system will empower LEVL's longevity app users to see how different lifestyle changes or supplement protocols impact their aging trajectory, and will serve as a core optimization function across LEVL's personalized recommendations engine and digital cohort testing model. A universal Pace-of-Aging algorithm lets anyone, anywhere, objectively track how fast they're aging, turning abstract longevity science into a daily, actionable vital sign that empowers earlier interventions and could dramatically extend healthy lifespan across populations.

Core Deliverable: A working prototype of a web-based and in-app biological age estimator, built around:

- A lightweight, on-device algorithm to estimate pace of aging and biological age.

- The ability to input or ingest user data (wearable metrics, blood biomarkers, qualitative metrics, etc.).
- A backend schema and simple UI to update predictions in real-time as inputs change.
- A basic interface for ranking input data sources by their predictive weight as new research emerges
- Ability to surface recommended next tests to improve accuracy based on users budget, tools at disposal, and effort level.
- Integration-ready architecture for LEVL's Protocol App, recommendation engine, and digital cohort testing model.
- Add plug-in support for testing new clock models (e.g., DunedinPACE, PhenoAge, etc.) as they emerge in the literature.

Scientific Relevance: This project contributes directly to the growing field of biological aging quantification by:

- Creating an open-source framework for evaluating and integrating new aging biomarkers.
- Translating complex epigenetic clocks and aging models into real-time, user-facing insights.
- Supporting the scientific mission of LEVL and the Longevity X Prize by optimizing personalized health interventions, including nutraceutical formulations and protocols around objective biological age metrics.
- Laying the groundwork for what could become the industry-standard benchmarking tool for longevity protocols.

Stretch Goals: (subject to available time and interest of the student team)

- Build a verifiability layer for user-uploaded data (timestamps, source type, etc.).
- Develop a public leaderboard comparing user pace-of-aging scores across demographics and input data completeness.
- Integrate the system with the LEVL Longevity Protocol App to create dynamic Longevity Scores (0–99) tied to pace-of-aging optimization.
- Begin modular breakdown of organ-specific age scoring (e.g., Heart Age, Brain Age, Liver Age) based on available input data.
- AI Visualization of users' relative age progression at different paces of aging

The students will be involved in every phase of the project from design through implementation. During the design phase, the students will interact with LEVL researchers to collect requirements and scope the development effort into manageable tasks. They will also gain experience with agile product development in a fast-paced startup environment, using the RICE prioritization framework and collaborating closely with business stakeholders to guide decisions and maximize impact.

Desired Skill Set:

This project is ideal for students excited about building real-world health tech that combines personalized data, biomarker science, and AI-driven insight. Helpful skills include experience

with full-stack development (React/Next.js for UI, Flask or FastAPI for backend), comfort working with structured data (JSON, CSV, or API ingests), and implementing modular scoring logic in Python. Students interested in biological data, longevity science, or digital health applications will find this project especially rewarding. Bonus if you've worked with wearable data, simple ML models, or health-focused apps, but not required. Tools can be picked up along the way—what matters most is thoughtful system design, clarity in code, and creative problem solving.

Student Benefits:

1. Gain hands-on experience with frontier models, scientific literature parsing, knowledge graph construction, and health optimization.
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.

Contact Information:

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