KRONOSFER MISSION

A Web GIS Based Satellite Mission Control Quiz Game

Developed for Full-Stack GIS Curriculum 2026

Mission Objective

Kronosfer is a high-performance educational platform built to bridge geography with technology.

- Identify orbital paths over a 3D Earth.
- Educational challenges across all continents.
- High-score competition with spatial tracking.

Technical Architecture

Frontend Engine

Built with CesiumJS for high-fidelity 3D globe rendering and real-time orbital path visualization.

Backend Infrastructure

Powered by Node.js and MongoDB Atlas for secure, schema-less spatial data management.

Mission Capabilities

Secure Auth

Registration and Login system with pilot-specific data encryption.

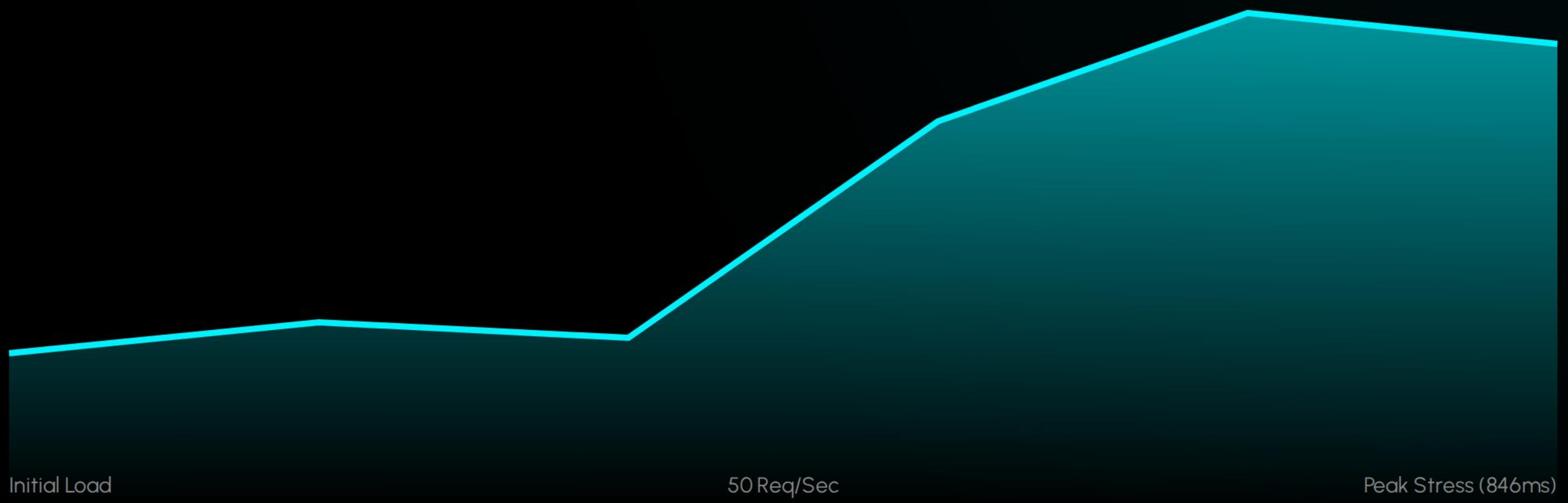
Spatial CRUD

Full lifecycle management of geographical high-score points.

AWS Hosting

Global availability via EC2 instances and PM2 process management.

System Scalability



Response time variation under Artillery.io stress testing conditions.

Cloud Dominance

The Kronosfer platform is architected for the cloud. Deployed on AWS EC2 (t3.micro), it maintains a 100% Success Rate even under intense bursts.

Utilizing Node.js clustering and MongoDB indexing (2dsphere), spatial query latency is minimized, providing an instantaneous mission control experience.

ANY QUESTIONS?

The mission control is now open for feedback.

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Satellite-Mission-Control-2026

Image Sources

https://png.pngtree.com/png-vector/20260101/ourlarge/pngtree-futuristic-spacecraft-control-panel-with-joysticks-screens-and-buttons-in-sleek-png-image_18380053.webp

Source: pngtree.com

https://img.freepik.com/premium-photo/global-communication-concept-earth-globe-glowing-lines-around-3d-rendering_808337-13841.jpg?semt=ais_hybrid&w=740&q=80

Source: www.freepik.com