

Florida International University KFSCIS

Fall 2024 Senior Capstone Project

GeoMapper

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PROBLEM

GeoMapper addresses the challenge of creating a seamless and user-friendly platform for professionals and travelers to document, organize, and share geotagged field observations. The lack of streamlined solutions for managing geographical data and annotations for digital media is the core problem GeoMapper solves.

CURRENT SYSTEM

Existing geomapping and coordinate management tools, while powerful, are often designed with technical users in mind, making them hard to use and unintuitive for the average individual. These tools typically require a steep learning curve, involving complex workflows and jargon-heavy interfaces.

REQUIREMENTS

- Import digital media and extract geographical metadata.
- Annotate and edit image properties (e.g., longitude, latitude, name).
- Export data in KML/KMZ formats for compatibility with geospatial tools.
- Provide a user-friendly frontend with seamless backend integration.

Personal Contribution

As the lead frontend developer, I focused on creating an intuitive and efficient user interface using Electron.js. My contributions included:

- **File Hierarchy Setup:** Organized the frontend file structure to ensure clarity, maintainability, and scalability.
- **Core Development:** Implemented key frontend features using HTML, CSS, and JavaScript, with styling supported by Bootstrap.
- **Electron Integration:** Set up and configured the Electron framework to deliver a desktop-friendly user experience.
- **API Integration:** Collaborated with backend developers to define API endpoints and integrated Axios for seamless communication between the frontend and backend.
- **Documentation:** Provided documentation for the frontend codebase, ensuring future developers could easily navigate and contribute to the project.
- **Collaboration:** Maintained consistent communication with backend developers to synchronize frontend-backend interactions and ensure smooth integration.

SYSTEM DESIGN

The system is designed with a clear separation of responsibilities between the backend and frontend. The backend handles core logic, data persistence, and metadata extraction, while the frontend focuses on providing a seamless user experience. Communication between the layers is facilitated using RESTful APIs.

SUMMARY

GeoMapper is a geotagging solution that bridges technical complexity with user-friendly design. My contributions to the frontend ensured the application is not only functional but also visually appealing and easy to use, enabling users to manage and share geotagged media effectively.

REFERENCES

[Electron.js Documentation](#)
[Axios API Library](#)
[Bootstrap CSS Framework](#)
[Spring Boot Documentation](#)
[Google KML/KMZ Specs](#)



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