APPLICATION TO OSU CAPSTONE PROJECT

OVERVIEW: The mission of our non-profit, *In Time of Need*, is to provide accurate, timely information about the availability of vital necessities (free or low-cost food, clothing, shelter, etc.) to anyone suffering from poverty, disability or disaster, as well as providing a handy resource to anyone assisting them.

We have developed an interface that asks the user to state their need and then, knowing their location, extracts all pertinent specifics from our provider database. It presents the results on an interactive phone, pad or desktop display.

Our challenge is that, while a great amount of provider data is publicly available, it must be obtained from websites and other sources and then be normalized before it can be uploaded to our database. And because much of this provider data is transient, we must update the database frequently.

THE PROJECT: Create a series of AI agents and REST APIs that will extract provider information from a variety of public sources and normalize the data in a format that can be uploaded to our database.

OBJECTIVES:

Core Technical Deliverables

AI Data Extraction Agents – Intelligent agents capable of automatically identifying and extracting provider information (e.g., location, services offered, contact details, operating hours) from a variety of public sources.

REST APIs for Data Integration – Secure APIs that enable automated transfer of normalized provider data into the database.

Update & Refresh Mechanism – Functionality to periodically check for changes in provider data and update the database accordingly, minimizing outdated information.

Error Handling & Logging System – Built-in monitoring, error detection, and reporting to ensure data quality and maintain system reliability.

Documentation & Support Deliverables

System Architecture Documentation – Clear diagrams and explanations of how the agents, pipeline, and APIs interact.

Developer Documentation – Instructions for maintaining, extending, and deploying the system, ensuring that future developers can continue to support the project.

User Documentation – Guidelines for non-technical staff at *In Time of Need* on how to operate and monitor the system.

MOTIVATIONS

The motivation behind this project stems from the critical need to ensure that individuals facing poverty, disability, or disaster have reliable access to accurate, timely information about essential services. In times of crisis, something as simple as finding a free meal, emergency shelter, or medical supply can be life-changing — yet the information about these resources is often fragmented, outdated, or hidden across multiple websites and sources.

By creating an automated system to gather, normalize, and update provider data, this project directly addresses a pressing real-world problem: the information gap that prevents vulnerable populations from connecting with the services that could help them. Inaccurate or incomplete data not only creates frustration but can also lead to missed opportunities for assistance at critical moments.

This project is impactful in two ways:

- **For individuals in need** – it improves the reliability of the *In Time of Need* platform, ensuring that people can quickly and confidently find food, clothing, shelter, or other basic needs in their community.
- **For support networks and organizations** – it reduces the burden on volunteers, social workers, and nonprofits by providing them with a trustworthy, centralized source of up-to-date service information.

Beyond its humanitarian benefits, this project is also technically meaningful. It combines real-world challenges in data extraction, normalization, and API development with the application of artificial intelligence to solve problems of scale and accuracy.

In short, this project is not just an academic exercise; it has the potential to improve lives by bridging the gap between people in crisis and the services designed to support them.

QUALIFICATIONS

Minimum Qualifications:

Basic understanding of REST APIs

Preferred Qualifications:

Experience with Javascript / Typescript
Experience with React JS
Experience building AI Agents