

## **EE/CprE/SE 491 WEEKLY REPORT 08**

11/01/2024 – 11/07/2024

**Group number:** 20

**Project title:** HADES: Holistic Astronomical Database Exploration System

**Client/Advisor:** TRAJCEVSKI, GOCE

### **Team Members/Role:**

<b><u>NAME</u></b>		<b><u>ROLE</u></b>
BYRD, JAMES	–	Database Backend, Cyber Specialist
COLLINS, EAMON	–	Client Contact, Database Backend
NORRIS, ALEK	–	Database Backend, Cyber Specialist
POLSTON, ALEXANDER	–	Database Backend, Cyber Specialist
SNYDER, ANDREW	–	Database Backend, Cyber Specialist
VARNITSKY, SVYATOSLAV	–	GUI Specialist, Database Backend

#### ○ **Weekly Summary:**

This week we worked to create a script for communicating with the OpenAI API to handle conversion of natural language to SQL queries. On top of this, we created the fourth part of the design document and our sixth lightning talk presentation.

#### ○ **Past week's accomplishments:**

- Successfully interacted with a custom GPT model using the API via Python.
- Worked on React application (Frontend UI)
- Ironed out the final details of deliverables for the end of this semester.
  - Functional UI, with Python and SQL calls being able to return.
  - NLP working on the test datasets.

### **Task Section:**

- Group
  - Look into getting funding for the OpenAI keys
- Individual
  - Test communication with OpenAI
  - Set up the React application locally and confirm it runs

○ Individual contributions:

<u>NAME</u>	<u>Individual Contributions</u>	<u>Hours this week</u>	<u>HOURS cumulative</u>
BYRD, JAMES	Researched OpenAI API solutions and application-specific details for each model they offer. Contributed to lightning talk and design document development.	5	36
COLLINS, EAMON	Investigated AI key cost. Worked to develop design documents, and lightning talk slides. Continued investigation and initial work on data parser. Worked on client communication.	5	36
NORRIS, ALEK	Investigated Ways of training OpenAI GPT models, and explored different ways to initialize it for our program. Contributed to the Lightning talk, as well as the Lightning talk presentation.	5	36
POLSTON, ALEXANDER	Set up documents and spaces for the work week to ensure a successful week. Worked heavily on creating and editing the 4th part of our Design Document and covered portions of our weekly report.	4	36
SNYDER, ANDREW	Worked on the fourth design document by exploring ways we fulfill requirements. I also worked to complete the sixth lightning talk.	4	39
VARNITSKY, SVYATOSLAV	Created locus diagram for design document. Contributed to the design document. Contributed to lightning talk presentation.	5	38

Plans for the upcoming week

- Continue the creation of the UI
- Begin consolidation of design document components
- Begin consolidation of the final presentation components
- Look into funding for AI API key

Summary of weekly advisor meeting

In this week's meeting, we covered the fourth part of our design document including what changes to make to it. We were given the numbers of multiple previous groups' design documents as a reference to improve our own. Otherwise, we were instructed to keep up the work being done on our UI demonstration for the presentation as well as a proof of concept for natural language to SQL query processing.