

Individual Capstone Assignment
Jalin Solankee

For my senior design project, my team and I are developing a custom AI agent designed to automate key aspects of project management. Our focus is on creating intelligent digital assistants that enhance task allocation, progress tracking, and predictive analytics. This AI agent will leverage natural language processing models like GPT-4o to optimize workflows by distributing tasks based on team members' skills and availability, while providing real-time updates on project progress. From a personal academic perspective, this project perfectly aligns with my passion for artificial intelligence, full-stack web development, and project management, offering an opportunity to apply my technical expertise in software engineering and data science.

My college curriculum has equipped me with the technical foundation needed to develop this project. Courses like CS2028C Data Structures strengthened my problem-solving abilities and equipped me with the foundations of DSA that are required in every programming task. CS4092 Database Design and Development provided me with a solid understanding of how to structure data and manage relational databases, which will be important when designing the backend architecture for our AI agents. EECE3093C Software Engineering introduced me to project management methodologies, including Agile, which will guide the collaborative aspects of this project. Additionally, CS2023 Python programming has helped me understand how data structures are to be implemented in python while also making use of the in-built structures that the programming language offers. Dictionaries will be a very important data structure for our project as it will be useful to store and output the information that the AI must produce.

My co-op experiences at Elevance Health have played a significant role in shaping my approach to the end goal of this project. During my tenure there, I worked with a team developing enterprise applications using automation which would make the process of insurance claims faster. I worked under my Manager Varma Datla, Mentor Matt Mark, and former GCIO Anil Bhatt who helped me through the two co-ops I did there. At my co-op I was able to gain huge chunks of knowledge regarding programming in Java while working on a project that would automate the mail that the company receives regarding print jobs that need to be processed at the company. This helped me get familiar with SpringBoot Framework which was used to automate the project being used. I also worked with the team to help in developing an AI extraction bot which was able to output significant information from any member claims documents that were presented to the health insurance company for the user to get the money back. This project helped me get familiar with prompt engineering and the use cases that can be implemented using the while using GenAI tools such as GPT-4o. These experiences helped me understand the importance of teamwork and project management as many team members work on the same block of code simultaneously which could lead to problems if the project management is not done correctly.

I am highly motivated to participate in making this project due to the increasing interest in AI in today's world. The use cases that AI holds are limitless, and it could help us identify many real-world problems which can be worked on using AI tools. Automating project management through AI excites me as I have used the project management tool that my company used which is a well-known website known as JIRA. This software ensures that every team member has an assigned task while working on the project. If this software can be automated such that it makes the job easier for project management, we can implement this in the real world as it would make project management significantly time efficient. My preliminary approach would be to identify a path to the solution of the problem and how each team member should work on that path to reach the final

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goal we set for the project. We need to ensure that we keep track of our budget and how the GenAI agent works with the information that is presented to it. By dividing the project into several phases, we can ensure that each component of our planned project is functioning correctly and seamlessly. Additionally, we will make sure to focus on making the AI more efficient and consistent by training it with some examples that we get.

The expectations of this project's final goal are to build a fully functioning AI agent which will be capable of automating project management tasks which include project boards, task allocation, progress tracking, and generating predictive insights about potential issues and delays to help employees prioritize their tasks accordingly. My personal contribution will include making the AI bot more effective while also making several prompts to make sure that the AI knows exactly what it should be doing with the information being presented to it. The success of the AI will be based on how well it is able to identify the problem and how well the implementation is, which would make sure that the tasks are successfully being managed by the AI. I will also make sure to get feedback from the team and we will make sure that the team is letting the advisor know of the progress of project and how far we are to the actual solution and final goal.