

Individual Capstone Assignment

For my senior design project, my team and I are developing a custom AI agent designed to automate essential aspects of project management. The AI agent will focus on task allocation, progress tracking, and predictive analytics, leveraging models like GPT to optimize workflows by distributing tasks based on team members' skills and availability, while providing real-time updates on project progress. From my academic perspective, this project perfectly aligns with my interests in artificial intelligence and full-stack web development. It presents an excellent opportunity to apply the skills I have developed throughout my Computer Science coursework and previous co-op experiences.

My college curriculum has provided me with a strong foundation for contributing to this project. Courses such as **CS 4033 AI Principles and Applications** have given me a deep understanding of artificial intelligence, which is essential for building and integrating the AI agent in our project. **CS 4071 D & A of Algorithms** strengthened my ability to solve complex problems, a critical skill for developing an AI system that can make intelligent decisions. **CS 4092 Database Design and Development** provided me with expertise in managing and structuring databases, which is vital for creating the backend architecture needed for task management and data storage. Additionally, **EECE 3093C Software Engineering** introduced me to Agile development methodologies, which we will use to manage the project's lifecycle efficiently. Furthermore, **CS 5127 Requirements Engineering** will guide me in gathering and managing project requirements to ensure the AI agent meets the functional needs of users.

My co-op experiences have also played a significant role in preparing me for this project. At **Schneider Electric**, I worked as a **Software Developer Intern**, gaining hands-on experience in full-stack web development and creating an internal website used to manage employee details. This gave me a solid foundation in both front-end and back-end development, as well as a deep appreciation for version control and deployment processes. During my most recent internship at **Cincinnati Children's Hospital Medical Center**, I worked on software development projects, where I contributed to React and TypeScript components and collaborated with multiple teams. This experience taught me the importance of communication and collaboration, especially when working in multi-disciplinary teams, and it will directly apply to our senior design team dynamics.

I am highly motivated to participate in this project due to my passion for AI and its potential to streamline project management workflows. Having witnessed inefficiencies in task management during my co-ops, I am excited to contribute to a solution that can automate key tasks and enhance productivity. My preliminary approach involves dividing the project into phases: first, focusing on the AI agent's integration with GPT models, followed by the backend database setup for managing tasks, and finally, front-end development for user interactions. This structured approach ensures that each component is thoroughly tested before moving on to the next phase, allowing for smooth integration and operation.

I expect our project to deliver a fully functioning AI agent capable of automating project management tasks, offering predictive insights, and ultimately improving workflow efficiency. My personal contribution will focus on AI integration and database management, ensuring that the GPT model works seamlessly with the backend and frontend systems. To evaluate my performance, I will measure success by the agent's ability to meet functional requirements, smooth integration,

and positive user feedback. I will also rely on feedback from my team and advisor to gauge my contributions and alignment with project goals. I will know that I have done a good job when the AI agent enhances productivity and meets the outlined technical specifications.