Individual Capstone Assignment
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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. In particular, 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, CS6065 Introduction to Cloud Computing gave me exposure to developing web apps, hosting them on various cloud platforms, containerization, and development and deployment workflows that can be implemented in real world scenarios.

My co-op experiences at Phillips Edison and Company have also played a significant role in shaping my approach to this project. During my time there, I worked under my Manager and IT Team Lead, Jake Meyer and Associate Vice President of IT, Goutham Vulapala, gaining exposure to full-stack development and collaboration within a structured Agile framework. I learned how to integrate backend systems with frontend interfaces. I also gained hands-on experience with version control, DevOps practices, and deploying software to production environments. These experiences taught me the importance of teamwork and clear communication, especially when coordinating development efforts across multiple teams.

I am highly motivated to participate in this project due to my passion for artificial intelligence and its potential to solve real-world problems. Automating project management through AI excites me because it directly addresses the inefficiencies I have observed in project workflows during my co-op experiences. My preliminary approach to designing the solution involves a phased development process: first, we will build and integrate the GPT-powered AI agent, followed by backend architecture and database setup for task management, and finally, frontend development for user interaction. By dividing the project into manageable phases, we can ensure that each component works seamlessly before moving on to the next. Additionally, we will focus on designing the AI to offer predictive insights using machine learning models, allowing managers to make proactive decisions.

I expect our project to result in a fully functioning AI agent capable of automating project management tasks such as 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 the AI development, ensuring the GPT model integrates effectively with the project management tools, and database management. To evaluate my performance, I will measure success based on three factors: whether the AI agent meets all functional requirements, whether it integrates smoothly with the frontend and backend systems, and whether it improves project management efficiency in real-world scenarios. I will also seek feedback from my team and our advisor to ensure that my contributions are aligned with the project goals. Ultimately, I will know that I have done a good job when the AI agent actually enhances productivity for users in real life scenarios and meets the project's technical specifications.