CS 224G Individual Insight Report
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Throughout CS 224G, I learned so much about developing an AI-powered product from ideation to implementation, while gaining invaluable insight from its lectures and having a lot of fun while building with my team. This 10-week journey was filled with challenges, learnings, and growth opportunities that have ultimately sharpened my problem-solving and collaboration.

One of the most important learnings from this course was the value of validating the core issues my team and I aimed to address. During our initial sprint for PharmD (our initial project), we focused on market research to ensure that the challenges of pricing transparency and pharmacy options were genuine concerns in the healthcare landscape. Through market research, we realized that the problem we were trying to address did not have enough stakeholders who cared enough, which made our pivoting process much easier. This experience taught me the value of thorough market research and the need to align our product with the real needs of our target audience.

Another important skill that I learned was the significance of iterative development and continuous improvement. Building the frontend interface for our mentor-matching platform required constant refinement to create an intuitive, engaging user experience. As we implemented more features in the backend, I learned that iteration — changing up our UI to match our growing suite of functionality — was the most ideal solution; rather than making huge changes, these incremental tweaks proved to be a lot more valuable and digestible for my team as well. I realized that the development process is not linear but rather a cycle of building, testing, and improving based on feedback and evolving requirements.

One of the most valuable technical insights I gained from lecture was the power of prompt engineering in conversational AI (Vijay Parthasarathy's lecture). Through both experimentation and iteration, I learned how to craft effective prompts that extracted responses that fit my need from ChatGPT, Perplexity, Phind, and Claude while I was building our app. The lecture on "Practical Guide to Prompt LLM" provided valuable techniques such as zero-shot CoT prompting, few-shot prompting, and self-consistency prompting, which enhanced the quality and coherence of our chatbot's responses.

Ultimately, working in a team environment taught me the importance of clear communication, role division, and collaboration. Initially, dividing tasks by features led to delays in integration and reduced teamwork. However, we learned that dividing responsibilities by infrastructure (frontend, backend, design) fostered constant integration, improved communication, and streamlined the debugging process. Our team members would then stick to their infrastructure, as this would mean they would know their own code base their best and would be able to iterate

through each sprint efficiently. While the divvying of work was segmented, this approach also ensured that every group member had a holistic understanding of the entire pipeline.

One of the challenges we faced was accurately estimating the time required for each component of the project. We initially underestimated the complexity and potential obstacles, leading to a rushed timeline and the need for a pivot midway through the quarter. This experience taught me the importance of thorough planning, setting realistic expectations, and being adaptable to change.

Throughout this course, I realized that the process of creating a product from scratch is not just about coding but also about ideation, validation, and perseverance. If anything, code was the easiest part because we assigned tasks to each other; all we would have to do at that point was just implement the code. The class structure of CS 224G provided a framework that pushed us to overcome barriers and continuously work towards our goal. I believe that I grew a lot because of this class, especially because I expanded my understanding of what I am capable of creating and was inspired to tackle new projects with determination.

In conclusion, CS 224G has been an invaluable journey of learning, growth, and self-discovery for me. The insights gained from market research, iterative development, prompt engineering, teamwork, and perseverance have equipped me with the skills and mindset to approach future projects with confidence and resilience. I am grateful for the opportunity to have worked on a meaningful product and to have collaborated with a talented team. This experience has ignited my passion for creating impactful solutions and has set the foundation for my future endeavors in the field of AI and product development.

To the CS 224G teaching team, I sincerely thank you for giving me the opportunity to grow as an engineer and team member.