

## Individual Capstone Assessment

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The senior design project is a unique opportunity to see a broad view of a project from start to finish. Even in projects where all the work is done by the group, the planning and purpose can be given by professors. The professional field of computer science is almost always project based. The planning phase at each step of a project can be overlooked and underappreciated. It's important to not fall into the trap of quick fixes and results without necessary planning and research. Being the programmer and the planner is a great way to learn to plan with the programmer in mind and vice versa.

There were many courses that introduced skills relevant to the project. Introduction to Computer Science (CS1100) and Data Structures (CS2028C) involved C++ and especially object-oriented programming through C++ lessons. They are relevant as OOP is essential to organized programming in a large project, and we may use C++ to code our backend. As we may also use python, Python Programming (CS2021) is also relevant. Software Engineering (EECE3093C) taught project management through assigned projects and will be directly applied to our project management, and the SQL learned through examples in Database Design and Development (CS4092) may be used to store the user data.

Co-op experience will also be very helpful in the project. As an Engineering Modeler-Programmer, I was introduced to code-management with Github and specifically Gitkraken. Our group will be using a github repository to work on our code together and manage the project. At Battelle I also worked on front-end development using HTML and CSS, which will certainly be applied to improving our GUI and user-experience. As a Junior Software Engineer at Thales in Cincinnati, I had much more freedom to make choices in project. This improved skills in improving efficiency and style choices in projects. I also learned a lot about AI and its implementation into software projects by working on their Genetic Fuzzy Tree Toolkit. We will use some sort of AI in our project in either image creation or user recommendation system.

The motivation for the project is to produce a product that utilizes publicly available AI to create a unique product based on user-input. While AI is often discussed, its full capabilities for specific uses can be difficult to generate, especially at an acceptable speed. Whether it be through interaction with APIs or our own speed improvements, we want to make the users experience easier and faster and combine it with the power of AI. Our preliminary approach involves looking at what apps are already out there and what we can offer that is unique to our area of competition, as well as looking into APIs that we can use for improvement. I am excited to participate in this project as I was recently exposed to the wide range of what AI can do. I have worked with AI that is designed to be readable and explainable and I want to use that to make a great user experience.

The solution is not really the difficult part as much as it is ironing out the overall smoothness and performance. Our preliminary approach involves studying other UI and app approaches as well as anything that interacts with AI. We will also be discussing our individual experiences with unique approaches and success of design methods. Our expected results are to have a public web app and mobile app launched that generalizes AI created images and expands on its capabilities. My personal evaluation will be largely on evenly splitting work based on our agreed upon deadlines. The minimum expectation is for me to finish my part, but I plan on working extra on anything that needs to be completed before the deadline that I may be more acclimated to complete.