In collaboration with my teammates Kevin Chu and Kate Schmidlin, I plan to develop a location based social media application for the tagging and sharing of street art. This application will use AR to identify and tag art around the city, hopefully engaging and promoting small artists to a larger audience. We hope to bring a fresh touch to tired social media market, targeting a niche interest group along the way. Using our combined expertise in web development, we plan to develop a fully functioning application by the terminus of Capstone next spring. My primary goal in participating in this capstone team is to hone and showcase my application development skills while learning from my team members and faculty. Ultimately through this experience I hope to bolster these skills so that I can bring them back to my role as an Applications Engineer at Kinetic Vision.

In my time at UC, I have had the opportunity to learn a little bit of everything. I began my college career as an Environmental Engineering student, where I sharpened not only my engineering knowledge, but my project management and technical communication skills. This, in addition to membership in the University Honors Program, made me a solid writer and an effective communicator, which I intend to bring to my role on my capstone team. On the technical side, since I changed my major to computer science just two years ago in the fall of my junior year, I have had an accelerated and intensive course of study that built my programming and systems thinking skills. I learned a great deal about app design in Software Engineering (EECE 3093C) with a python/Flask framework, and how to build a large integrated system in Database Design and Development (CS 4092), where I designed a functioning E-Commerce website using React. This last year, I took Cloud Computing (CS 5165), which gave me a strong foundation for how we will host and deploy our application.

I completed my first co-op at the Metropolitan Sewer District of Greater Cincinnati as an Environmental Engineering student. Although many of the skills I employed here are not directly transferable to development, I gained valuable experience in technical communication and professional writing. I recently completed my final three co-op rotations (a triple rotation, Fall 2024-Fall 2025) as an Applications Development co-op at Kinetic Vision, where I continue to work part time. In this role, I develop software solutions to complex engineering problems, typically in the 3D modeling space. I develop primarily in python, with most of our applications in Plotly’s Dash web application framework but also work on React and C# applications from time to time. This web development experience will be specifically relevant to our capstone project, as we plan to implement an online social media application. In addition, I assist in project management operations from time to time, including, but not limited to, creating Gantt charts, resource management, and writing documentation, which will specifically be helpful to keep our capstone project well documented and on track.

In choosing a capstone project, I knew I wanted to continue focusing my efforts on application development, as this is a skill that is directly applicable to my career of choice. As such, developing a social media application seemed like the perfect choice. Since I have experience with Flask and React, I intend to push for a web-based solution using one of these frameworks. I lean towards Flask as a framework for this application, as it is developer friendly in nature (as I will be collaborating with two other team members), it is fast, and it is extremely scalable. Some of the most well used social media applications, like Linkdin and Pinterest, are all developed using Flask. As a majority of my experience is in front end development, we will need to collaborate as a team on an appropriate data storage and interfacing solution. I was also greatly intrigued by the plan to integrate AR into our application, as this is not a field I have worked with before. Although I have experience doing 3D modelling using software such as VTK and BabylonJS, I haven’t had the opportunity to dive into the AR realm, and I am looking forward to flexing my creative muscles and learning more.

As a project like this is Agile in nature, it is important that we lay out the groundwork in writing before we begin development. This will require a great deal of project management and coordination, a role I plan to step in to as we begin this process. It is important for the progress of our project that we define clear goals at the start to avoid scope creep, as we have a hard deadline on this project and want to deliver our best possible work. With requirements laid out, we can be sure that we continue to iterate on our best ideas, rather than bouncing from thing to thing across weeks. While the full list of requirements of our project will be laid out in later documents, it is safe to define a few of our high-level goals. First, the application we develop will be a fully functioning social media – meaning users will be able to create and manage accounts, post to their accounts, and engage with other users. Next, our application will employ a robust and scalable database system to save user data and interactions. Finally, the application will be hosted in a manner freely accessible to users from the internet. From these goals, we will later define a list of user stories, and, upon completion of the user story backlog and rigorous user acceptance testing, we can be sure that a finished application will be delivered by next Spring.