Individual Capstone Project

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Our Senior Design project is going to be a chess engine with a front-end web app. We will deeply explore different solutions for the chess engine, using game theory and Artificial Intelligence. We will also use cloud computing concepts and host our processes via the cloud. This will allow for scalability as well as accessibility. Academically, the focus will be with the engine itself. AI and chess engines are always improving in our world, so this project will be largely research based to ensure we can deliver the best possible engine.

From AI principles and Applications, we will use the principle of intelligent agents and utility functions, as well as game theory. We will also utilize Algorithms and monitoring performance. Since we are designing a Software program, we will use concepts from Software Engineering by writing tests, and ensuring we are following a good process. We are going to utilize a Jira-like system to follow and maintain a consistent project. We will also use Python which we learned from the Python programming course. We may use a database and utilize concepts from the Database and Design course.

I will utilize many concepts that I have learned from my co-op. Concepts such as general front-end development, and UI design will help me build a good front end. These were concepts I used both at Pluto TV and FOX. Nearly all my programming abilities I have learned from my co-ops. Code organization, utilizing protocols and libraries, and git are all things I have all learned from my co-op experience. I will also utilize my skills at collaborating and working as a team. At Pluto TV I improved drastically with teamwork skills because I work with a global team.

I am excited about this project because I love chess. I’m not too good, but the game fascinates me. I am also very excited to build a cloud application and work with front end tools like React and maybe typescript. I have always been interested in building a game, so I think chess is a good first start. For the engine, we are thinking about utilizing python for the many libraries related to artificial intelligence. We will host this process in the cloud, so that our front-end web app can trigger the engine to generate moves.

For the front end, I would love to use reactjs for this because it’s a fantastic framework and can scale to mobile devices as well. Also, it is incredibly popular, and something I want to learn. As far as what I want to accomplish, I want to have a clean chess board with easy to control components and a solid AI. We will evaluate our contributions based on the outcome of the web application. If we can build a challenging engine with a good front end and deliver on time, then I think we can say we have done a good job.