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CS5001 Computer Science Senior Design I

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Individual Capstone Assessment

For my senior design project, I, along with my team, will be pursuing a game design project. I’ve always been fascinated with video games and design. Some of my earliest memories are from playing Super Nintendo at my grandpa’s house at the age of 2 or 3. I was playing Super Mario World and Mega Man X before I could remember. When I was 3, my family got our first computer at our new house; one of those off-white (or soon-to-be yellowing) Gateway machines with Windows 98. I grew up on the computer, on the internet, messing around with and trying to figure out everything to do with computers and video games. By the time I finished high school, I thought that graphic design was for me, but I ultimately decided against pursuing an art-related degree in favor of working with computers. However, I’m always picking apart the things I see or enjoy and internalize what I like about them, how I would do something like that, how I could do it better, or how I can make them my own, whether it be music, games, movies, or any kind of art or media. To be truthful, I don’t think computer science was exactly right for me either because I’m more interested in programming and video games than I am dealing with math, big data, or analytical disciplines. But, I always like working with computers, and my unique path through college has taught me a lot and helped show me exactly what I do and don’t want for my career, and there’s plenty of important information to take from things you might never have an interest in if it helps you work with others on a team who do have to do those things in the professional world. Ultimately, I wanted to go to school to pursue computer science to one day make video games that I could enjoy myself, that I could share with my friends, that make other people happy, and that I could be proud of.

I knew for a long time that if I wanted to learn how to code or become a programmer, that I wouldn’t be able to do it on my own. As somebody with ADHD (which I didn’t know at the time, but makes a lot of sense now), I wasn’t going to be able to sit at a computer and put in the commitment to properly learning such a vast, complex subject without getting distracted or losing interest. But, as soon as I started taking Computer Science1 (CS1021C) with Professor Montjoy, I knew that it was right for me. Having somebody so invested, entertained by, and experienced with programming in everybody’s favorite, classic programming language, C++, teach you everything from scratch about how computer languages work was enthralling. I was hooked. Being able to build on what I learned, poke around, and tinker with something new and understand it felt really empowering. I felt pride in knowing that this was something doable that I could use for a career. It just clicked. Programming challenges and assignments, projects, learning how to manipulate Arduino robots, and having the freedom to play around with them in fun, creative ways helped me feel at home in my major and that I could do big things with my newly found skills. So, of course I chose to make a simple blackjack command line game for my final project.

My most recent co-op, and current part-time job, at Learn21 was another huge paradigm shift for me and helped lift a huge weight off of my shoulders. After struggling to find a co-op for my first two rotations and having to replace them with the EEP option, I felt like I was at a low, like I didn’t fit in with the industry, and like I wasn’t wanted. So many co-op job descriptions wanted things that I didn’t know how to do and made me wonder who amongst my peers actually did know how to do them or when I would learn how to do those things myself. I didn’t feel like an advanced programmer, I didn’t know anything about front or back-end work, or how to make websites, deal with SQL databases, or most anything beyond basic coding and data structures. But, after finally making a connection with Learn21, I found people that I genuinely enjoyed connected with, who understood who I was and how I understood things, and who helped me realize that the real, professional world in the tech industry isn’t as scary or demanding as some of the job descriptions or interviewers make it seem. I was easily able to learn and grasp many of the concepts I needed for my job on the fly, and I practically did most of my learning about how to use C#, SQL, HTML, JavaScript, and much more while I was there, through brute force of trial and error. This role helped me realize how much I actually did know, how skilled and talented I could be with programming, and to regain confidence in myself for my future career. Being somebody who is so technically inclined, details oriented, and fast learning, I was easily able to adapt and find my rhythm as a software developer and design analyst.

For our game design project, I wanted to attempt something achievable. Making an entire game is no small task, so I knew that our game has to be 2-dimensional because 3D games are often first-person, or require too much up-close detail regardless. Making something more *retro* should be more simple because we won’t have to worry about learning about modeling and lighting as much, and art can be made faster *or* placeholder art won’t take away from the experience or become distracting as easily. I already have some experience working with Unity, have more recent experience and comfort with C# (which Unity is based in), and find that their own learning resources are rather intuitive, so it should be easier for others to grasp in working with a team. So, finally getting to make a real game, however small or simple, that is a complete, start-to-end or replayable experience, should be achievable, and I’m excited to see where we can go with it.

I’m always looking for ideas to learn from other games, what they do right or wrong, what makes a good game, what makes games fun or makes people want to keep playing them, and what can be improved upon in any game that I play or even just hear about. I consider myself a very progressive person politically, and some of my teammates have expressed interest in doing work that is environmentally conscious or creates some positive public impact. While games are mostly seen as entertainment, I’m of the mindset that they can be perceived as art, and also find environmental or social impact to be important in the change that I want to create or see in the world. Hideo Kojima has done a lot to make his games interactive and have some impact on the player, whether it’s to make them laugh or to think about their decisions or actions, virtual or otherwise. I want to bring some sort of lesson or interactivity to what we create by learning from Kojima and other designers’ work i.e. by giving players meaningful choices that have consequences that actually affect the game or challenge how they think or by making player actions, second-to-second, affect the progression of the game world down the line by showing them that everything that they do, no matter how small, can affect the world around them in big ways. In the end, the game needs to be easily understandable in terms of its controls or the presentation of aspects of its gameplay by other young adults or teenagers, it needs to be a completely functioning piece of software by providing a user experience expected of most video games (start, continue, save/load progress, pause, quiet, etc.), it needs to be entertaining in minute-to-minute gameplay, control well, and be easily shareable so that anybody with a modern computer can play it. If the game is to have an important message that we want to share, access to it shouldn’t be restricted by a price, by a player’s education, or by hardware. Hopefully, with the ever-growing accessibility of powerful tools like Unity and modern devices, the game should be easily shareable and having something that works on multiple platforms should be achievable as well. We will know when the game is done when we playtest it ourselves and realize that we’re actually playing a game and want to keep testing it and it is no longer a piece of code or software in a project file.