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CS-499 Computer Science Capstone

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Module 5-1

Journal: Computer Science Trends and Artifact Update

Part One:

1. What is the significance of each trend?
   * **Augmented Reality (AR) and Virtual Reality (VR)** – for this trend I think it is extremely important for a couple of different reasons but build from each other. The first is improving surgical procedures and educating more doctors than allowed previously. First by having these goggles we allow doctors to perform surgeries multiple times and practice as many times as we wish so that they can improve their experience thus, giving them valuable tools and situations that they may have not experienced before. They can fully map out areas, see layouts of body parts, and even project detailed guides to help improve their skills before they ever cut a patient. It also allows people that may not be capable of achieving the high level needed to perform these types of surgeries, to pass the necessary courses, which will hopefully prevent future harm. The other way is producing more doctors by providing lower funded areas of the world, a way to teach and practice, without the cost of cadavers, meaning they can get better experience and improve their skills. This will hopefully lead to more doctors and better results with limited costs thus changing the trajectory of those different career fields in the limited financial areas.
   * **Sustainable Technology –** With the world changing and climate change becoming a bigger issue and materials being finite, having a more sustainable source for technology is essential for the long-term future of the planet. We must find solutions to the issues we have created so that the future generations have a planet and materials that they can use to survive and thrive long into the future. We need to stop pretending that these problems are not real and make changes to the way we see things and use new technology to change the world for the future and not just for the right now and the quick high dollar.
2. How will each trend change the field of computer science?
   * AR and VR will change access for different groups, like with most things I think we also must be careful of potential problems that may come with it. We can not let the world be ‘lived’ only within the goggles and ensure that they are only used as tools or a fun toy. They can’t be used in place of people and are interactions and change the way we interact with each other completely or I think it could change us in ways that would greatly redesign the way the world currently operates.
   * Like stated above without this change of sustainability, we will destroy the planet past the point of not return and leave a world that may not be uninhabitable for future generations and I think we have to take a look at what the cost and benefits of the technology we are working towards are and see if the truly are worth potentially changing or extinguishing the planet as we know it.
3. How will each trend change the experience of consumers, workers, or citizens?
   * Just like with most thing I think both these trends can have advantages and disadvantages. For AR and VR, I think it can have really good effects for people and places by giving access to things that they may never have had before due to the financial situations the world has given them. It can also allow things to be tested indefinitely because the outcome can be redone over and over again, with slight changes to get the best option available. The other side is the possibility of moving the entire person’s experience into the virtual world, I do not think this is currently available, but it is something that must be looked at and addressed before it can become a bigger problem. I think as humans we thrive on human interaction, and I do not know the harm that can arise from limiting that interaction to just virtual. Until that option is available, I do not think we will know the true impact.
   * I think climate change is real and we need to be actively working on solutions to be proactive in reversing the changes we as humans have made to the planet and if we do not act now, we are moving towards a planet that may not be a place for humans in the next couple of generations.
4. How will each trend fit in with your career interests or aspirations?
   * I think both provide help for people when done with the intention of helping I don’t think that is always why they are developed but that is something I want to work for. I want technology that makes people have more joyful and relaxing life and whatever technology that can help lead to that is something that I want to work on, and I think these to trends lend themselves to that.
5. Which course outcomes have you achieved so far, and which ones remain?
   * Meeting basic coding principles and a standards when applying to a new database

Part Two:

Provide an update to your instructor on your progress with each category of artifacts for the ePortfolio:

* Software design and engineering
* Algorithms and data structures
* Databases

I have been mostly working on three and adding a new database based on a sports card spreadsheet I was working on with my brother. I never got my original project to work in the class based on dog shelter and I am working on a basic database and a linkage to a website to see a collection and whether or not the person has it. I think this is important because it shows an everyday idea turned into something that is useful and that people actually use. I hope to have a working model by the end of this week. This is a new database and I want to make sure it works and that it meets the requirements. I know this has not been the easiest of transitions towards things but I appreciate the help and the movement towards the different areas, and trying to complete the entire project and the motivation and perseverance to getting the ‘job’ done.

Connolly, L. (2025, August 25). The future of surgery: Using augmented reality goggles in the operating room. *News*. <https://health.ucdavis.edu/news/headlines/the-future-of-surgery-using-augmented-reality-goggles-in-the-operating-room/2024/08>

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