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CS-499 Science Capstone

**Journal: Computer Science Trends and Artifact Update**

**Significance**

The first trend is Virtual reality (VR) and Augmented reality (AR). Since VR and AR change the way we interact with digital material, they are important. AR combines digital and real-world features, while VR provides completely immersive worlds. In addition to entertainment, these technologies are also transforming industries like education, and healthcare.

Second trend is artificial intelligence (AI) in Gaming. By making games smarter, more accessible, and decentralized, emerging gaming technologies like AI, cloud gaming, and blockchain have transformed the gaming industry. These developments expand the gaming community’s diversity and unlock the potential for creativity.

**Influence on Computer Science**

For VR and AR, advances in AI, real time data processing, graphics, and user interface design are all necessary. They impact fields like software development, robotics, and simulation by encouraging the developers to use new technologies to build more adaptable systems.

Similarly, developments in AI gaming encourage innovation in blockchain, AI algorithm, cloud infrastructure, and cybersecurity. Now, developers need to focus on creating intelligent, scalable systems, making sure different platform multiplayer experience are secured and smooth.

**Influence on Experience of Consumers, Workers, or Citizens**

VR and AR will make studying, shopping, and gaming more interesting. Customers can browse virtual stores, and medical students can safely perform procedures. Simulations can be used for client demos and training by employees in industries like aviation and transportation.

High end games can be enjoyed by consumers without paying for costly hardware, and producers can profit from improved tools and sources of income. AI enhances reality and involvement of gameplay, while blockchain enables players to own their items in the game.

**Career Interests or Aspirations**

My goal of working in software engineering and developing applications has a close connection to these trends and technology. Creating intelligent games and applications is something that interests me.

**Outcomes Achieved and Remaining**

I am getting better at using the concepts of software development and studying practical uses such as client server, simple 3D modeling, sensor integration. But I am still interested in learning more about advanced parts like cloud platforms, AI systems, and graphics programming.

**Status Checkpoints for All Categories**

|  |  |  |  |
| --- | --- | --- | --- |
| Checkpoint | Software Design and Engineering | Algorithms and Data Structures | Databases |
| Name of Artifact Used | Event Tracking App | Gravity Sensor App | Animal Shelter module |
| Status of Initial Enhancement | Debugged, proper commenting and structure | Debugged, proper commenting and structure | Code is reorganized to improve readability. |
| Submission Status | Submitted | Submitted | Submitted |
| Status of Final Enhancement | Done | Done | working |
| Uploaded to ePortfolio | No | No | No |
| Status of Finalized ePortfolio | Undergoing | Undergoing | Undergoing |

**References:**

Anderson, M. (2019, February 28). The future of VR and AR. IEEE Computer Society. <https://www.computer.org/publications/tech-news/trends/the-future-of-vr-and-ar>

Bradshaw, R. (2025, April 17). The Future of Video Gaming: Technologies That Will Transform Our Experiences. Apollo Technical LLC. <https://www.apollotechnical.com/the-future-of-video-gaming/>