Computer Science Trends and Artifact Journal

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One trend is the rise of virtual and augmented reality in smart wearables, such as Apple’s Vision Pro. This headset allows users to interact with digital systems without traditional hardware, using movement tracking to create immersive environments. By combining AR and VR, it enables experiences that respond to the user’s perspective and actions, transforming how we interact with information and digital spaces (Lashinsky, 2023).

The other is SpaceX's "Mechazilla," a robotic system designed to catch and reuse rocket boosters. This innovative approach to automation makes space exploration more cost-effective and sustainable by enabling the reuse of heavy boosters (Business Today, 2024).

These technologies are reshaping computer science by advancing fields like spatial computing, AI, and real-time interaction systems. As AR and VR evolve, the demand for advanced hardware and software will drive innovation in computer vision, machine learning, and gesture recognition. Similarly, Mechazilla’s advancements in automation and robotics encourage the development of smarter algorithms, more accurate sensors, and efficient decision-making systems, particularly in aerospace.

For consumers, Apple Vision will revolutionize how we experience media, work, and socialize, seamlessly blending the digital and physical worlds. For professionals in design, engineering, and education, AR and VR will enhance collaboration, training, and remote work capabilities. On the other hand, SpaceX’s Mechazilla could lower launch costs, make space travel more accessible, and increase automation in the aerospace industry, boosting both efficiency and safety. These innovations also create new opportunities in space exploration, education, and interactive services for everyone.

As fascinating as these trends are, there is still room for improvement and scalability, areas I’m excited to contribute to in the future. Apple Vision’s AR and VR capabilities offer the chance to work on AI-driven systems that enhance human-computer interaction and create immersive experiences. My particular interest lies in refining environmental alignment to ensure seamless integration between the digital and physical worlds. Similarly, Mechazilla’s focus on robotics and automation aligns with my passion for developing AI for real-world applications like autonomous systems. These trends provide incredible opportunities to apply my AI expertise in innovative ways, pushing the boundaries of technology.

The course outcomes I’m still working toward include designing and evaluating solutions that address specific problems using algorithmic principles while managing trade-offs in design. I also aim to improve my ability to design and deliver professional-quality communication—oral, written, and visual—that is clear, technically sound, and tailored to diverse audiences. These goals are essential for my growth as a computer science professional and will help me create well-rounded solutions while effectively communicating complex technical ideas.

References

Lashinsky, A. (2023, June 5). What is Apple’s Vision Pro really for? Harvard Business Review. <https://hbr.org/2023/06/what-is-apples-vision-pro-really-for>

Business Today. (2024, October 14). *What is Mechazilla: The giant arms that caught the massive Starship rocket midair*.<https://www.businesstoday.in/technology/news/story/what-is-mechazilla-the-giant-arms-that-caught-the-massive-starship-rocket-midair-449875-2024-10-14>