**Emerging Technology and Artifact Update**

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With the shift from manual to automation, computer science plays a significant role in contributing to the digital transformation of autonomous vehicles, which integrates artificial intelligence, machine learning, and IoT applications to add “better safety and intelligent movement of vehicles." (Volume, 2022) The conceptual impacts of autonomous technology are essential factors in handling futuristic vehicles because self-driving vehicles will gain attention and the government will cooperate with autonomous manufacturing vehicles to establish a law to regulate all means of travel open to the public; for this transition to happen as expected, autonomous vehicles (AV) require robust computing power to drive independently. With this in mind, one may argue that computer science will be in greater demand because AV “utilizes sensorial technologies such as computer vision, odometry, GPS, laser lights, sensors, and a mapping system to navigate.” (Volume, 2022). These technologies are used to determine environments and locations and recognize suitable routes that will need to be maintained and implemented to correct unforeseen computations.

As the article elaborates, “AVs are supposed to minimize vehicle accidents, enhance the flow of traffic and movability, reduce the utilization of fuel, be free from driving, and facilitate business operation and transportation.” (Volume, 2022). These conveniences present other issues because they will transform modern society as self-driving vehicles and trucks become commonplace. Moreover, it will change every aspect of life, including transportation, and make many jobs absolute.

In the academic journal of Augmented and Virtual Reality in spine surgery, current applications, and future potentials, the authors illustrate the importance and future of these technologies in recent improvements of AV and AR that find their place in healthcare, spine surgery, and cardiovascular care. The unique capabilities and flexibility of integrating these technologies with others make them beneficial across different aspects of the healthcare system. With the current state of these technologies, computer science is at the center of their advancements. Moreover, it is an essential factor in handling their futuristic impact, especially augmented reality finds its place in surgical planning. Despite the current applications of VR and AR in surgical planning that remain limited, the likely impact is endless because surgeons, consumers, and communities will have transparency and more assurance that medical equipment equipped with these components will help prevent surprises sometimes faced during surgical operations.

The AR and VR applications attract the attention of the public and researchers suggest it may be the next largest technological innovation. If so, computer science will be at the center of hardware and software applications to develop new techniques for improving virtual and augmented reality. That means, these components will create more opportunities for computer science professionals to maintain and develop new techniques for better simulation.

After reading the top ten emerging technologies of 2016, I conclude the next game changer is next-generation batteries and perovskite solar cells. These technologies are the future of the planet to combat global warming; despite the environmental issues that exist regarding battery manufacturing and disposal, including its impacts on the ecosystems. The advancement in these technologies may pose other issues than any other technologies that come with their advantages and disadvantages. But they certainly will help reduce global carbon emissions and improve air quality. According to the transportation administration, transportation alone and fossil fuel accounts for 24% of global GHG emissions; therefore, transitioning to battery or solar power is a critical components solution to emissions reduction.

For each category of the ePortfolio, I am making excellent progress in enhancing and refining the artifact. As of today, I am polishing the artifacts to present my best work.

References

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