Bibek Shrestha

CS-499 Science Capstone

**Journal: Emerging Technology and Artifact Update**

**Identification and Description**

One of the trends that is a game changer which created a new trend is a small, compact electronics called wearable health devices. These devices are made to measure and monitor individual health data, including blood pressure, heart rate, blood sugar, and physical activity. To provide users with personalized health analyses and early alerts about any medical conditions, they frequently connect to smartphones and use artificial intelligence (AI) to analyze the data collected.

Second trend is voice activated technology which enables users to use voice commands to control devices, use resources, or get information. It is often used in AI powered customer support chatbots, smart speakers, and smart home systems, providing a natural and hand free method of interacting with electronic devices.

**Impacts on Computer Science**

Wearable healthcare equipment has prompted innovations in data analytics, artificial intelligence, and Internet of Things (IoT) integration in computer science. For me it gives the chance to work on software that creates predictive health models, processes large amounts of real time health data, and improves data security and privacy in healthcare applications.

Voice activated technology enhances computer science by improving speech recognition, natural language processing, and AI powered conversational systems. In my field, it provides possibilities for creating voice activated applications, increasing accessibility for individuals with disabilities, and improving interaction between humans and computers.

**Impact on Humans, Communities, or the World**

By promoting healthier habits, these devices assist people in taking control of their health before issues escalate. By identifying problems early, they can lower hospital visits in communities, and by analyzing large amounts of health data, they can improve public health outcomes worldwide.

Voice activated systems increase the access and efficiency of technology, especially for those who are visually impaired or have limited mobility. Communities can benefit from easier access to services, while technology worldwide promotes more smooth interactions between humans and machines and makes electronic devices more accessible to people.

**Course Outcomes Achieved and Remain**

I am more skilled in applying software development concepts and learning about practical uses like creating android applications, combining various sensor types, and modeling basic 3D graphics. However, I am still interested to learn more about advance 3D graphics modeling, AI systems, and other complex aspects of program development. Also, I must upload completed eportfolio, finish the required documentation, and finish the e-portfolio enhancement.

**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, basic enhancements with proper structure. | Debugged, basic enhancements with proper structure. | Code is reorganized to improve readability, debugged. |
| Submission Status | Submitted | Submitted | Submitted |
| Status of Final Enhancement | Done | Done | Done |
| Uploaded to ePortfolio | No | No | No |
| Status of Finalized ePortfolio | working | working | working |

**References:**

Guleria, R. (2025, June 6). 25+ Emerging Trends in Information Technology [2025]. <https://www.yourteaminindia.com/blog/emerging-trends-in-information-technology>