Summer Scholar Henok Mekuria Explores Prompts for Image Generative AI and Sensory Explorations Using Haptic Technologies.

The Summer Scholarship for Black Students ran again in July 2023. As part of KMI's fourth cohort, Henok Mekuria took on challenge 3: 'When AI creativity interacts with haptic touch, what will happen?'. We caught up with Henok to ask him about his topic and experience as a scholar with KMi.

Henok, can you tell us what your project was about?

My project was creating an interactive website that allows users to experience and engage with textures through a haptic touch device. When users rub the texture listed, they not only see the corresponding image but also feel the vibration from the device and hear the sound associated with that texture. The unique aspect of this project is that all the images displayed are generated by a generative AI tool named Midjourney. These images are based on prompts generated by another AI tool called Bard, which processes and describes real-world artworks made by humans.

It seems like that required many processes. What was a specific task you had to undertake?

One of the specific tasks was researching various generative AI tools to determine which would best suit the needs of my project. After thorough research and practical testing, I used Midjourney for image generation and Bard for generating prompts based on human-made artworks. Additionally, I was responsible for integrating these generated images into the website, ensuring that users could seamlessly interact with the textures through the haptic touch device, view the AI-generated images, and experience the corresponding sounds. This integration was crucial in providing a holistic and immersive experience for the users.

Was there a time when you had to apply problem-solving techniques to fix an issue?

Yes, while integrating the haptic touch device with the website, I encountered challenges in synchronising the generated images with the corresponding haptic feedback and sound. To fix the issue, I isolated each component – the image display, haptic feedback, and sound – to ensure they functioned correctly individually. Then, I integrated them step by step, addressing synchronisation issues as they arose. Through iterative testing and adjustments, I achieved a seamless user experience where the visual, tactile, and auditory elements harmonised.

How did you manage your time during the scholarship?

I started by setting clear milestones and breaking the project into smaller tasks. I then prioritised these tasks based on their importance and dependencies. I set aside time blocks for research, development, and testing, which helped me stay on track, and I met my project goals within the scholarship timeframe.

Has the scholarship given you ideas about what you would like to do in the future?

Absolutely! The scholarship has opened my eyes to the vast potential of integrating AI with interactive user experiences. This experience was so transformative that it fuelled me with motivation to pursue studies in data science after completing the scholarship. In the future, as I delve deeper into data science, I'm interested in exploring more ways to bridge the gap between AI-generated content and human interaction, especially in the realm of art and sensory experiences. The project highlighted the profound intersections between technology, art, and human experience, and I'm eager to explore this nexus in my academic journey further.

Finally, what would you say to future applicants who want to apply for the KMi Summer Scholarship program?

I would advise future applicants to come with an open mind and a willingness to experiment. The KMi summer scholarship program provides a unique opportunity to delve deep into innovative projects and explore different technologies. You get the opportunity to gain experience and learn from world-leading researchers, and support is always available.