DEDAN KIMATHI UNIVERSITY OF TECHNOLOGY

MONTHLY NEWS BULLETIN

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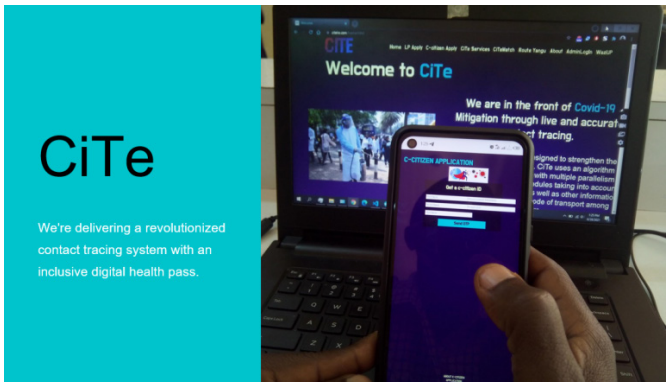
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Dedan Kimathi University of Technology Students Develop a Health Pass to manage Covid-19



The Covid-19 pandemic has affected nearly every aspect of life, from personal life to work life. It has also exposed the need for innovations and implementation of technology-based approaches in the management and execution of healthcare services worldwide. This pandemic has triggered an unprecedented demand for digital health technology solutions and has revealed successful solutions such as population screening, tracking the infection, prioritizing the use and allocation of resources, and designing targeted responses. In line with this, Solomon Githu, a student at DeKUT and Brandon Ochieng, Innovators Club Coordinator, developed an electronic device named Citizen Tracking CiTe. The electronic device seeks to manage Covid-19 spread by improving contact tracing through the creation of a digital database with real-time track delivery. This device will also facilitate quick clearance of people entering major buildings, travel checks and public places by getting their temperatures and relaying instant feedback on their access, denial or potential exposure to persons suffering from the virus.

The system also eliminates the need to have contact tracing applications on smartphones or use USSD codes, which have proven to be unreliable and compromise user privacy.

According to Mr. Ochieng, the device will be accessible to everyone by placing it in various points, providing a unique identification system for all persons screened, which will aid in fast contact tracing and relaying of immediate digital feedback to the authorities and health facilities on symptoms of the screened persons or their previous exposure to persons who had contracted the virus for possible actions where necessary.

"Upon access to our device, a person's temperature will be screened, which creates a unique Wazi ID and contact details for the person, this will be posted to the online cloud, the system will then cross-check on the entire database and check on the digital health status of the specific person which will be relayed to the relevant authorities for action" added Mr. Githu.

The two were also privileged to make it to the final shortlist of Wazihub challenge competition. Wazihub is a Research and Innovation programme funded by the European Union. The program challenges young people and startups to develop innovations in information technology that provide solutions to major challenges facing the African continent using the Internet of Things and big data ecosystems.

As we celebrate Mashujaa day, learn why the University is named after the renowned freedom fighter, Dedan Kimathi Waciuri

Dedan Kimathi was the leader of Mau Mau, Kenya's armed independence movement. Widely regarded as a revolutionary leader, he led the armed military struggle against the British colonial regime in Kenya in the 1950s until his capture in 1956 and execution in 1957. Kimathi is credited with leading efforts to create formal military structures within the Mau Mau and convening a war council in 1953. Dedan Kimathi University of Technology is among the many other places that are named after him. The University was founded as a community initiative to create opportunities for the young people. Established to improve the material wellbeing of ordinary people, DeKUT commemorates the liberation struggle in Kenya. It is the spirit of the likes of Dedan Kimathi Wachiuri which led to independence. Our vision, mission, and core values are attributes that this University strongly identifies with to improve the society. We commemorate his courage and bravery by celebrating him every year in the week that falls 18th February, known as 'Kimathi Week.

Read more about Dedan Kimathi Wachiuri here; https://www.dkut.ac.ke/index.php/about-dekut/s5-accordion-menu/why-dedan-kimathi





(Unveiling of the busts of Dedan Kimathi and Nelson Mandela on 16th January 2019 at the Heroes and Heroines Garden.)

DeKUT holds a youth mentorship program in conjunction with Rhema Missionary Outreach International (RMOI)

Rhema Missionary Outreach International (RMOI), in conjunction with the University's Student welfare, on 9th October 2021, conducted a youth mentorship program at the University's Conservancy to empower teenagers between 12 to 15 years of age with knowledge and social skills in this Covid times.

Rhema Missionary Outreach International is a non-denominational ministry that reaches out to the body of Christ with a mandate of mobilizing the church in Kenya and Africa toward revival through prayer and missions' mobilization.







Courtesy visit by the Chief Executive Officer Torrents East Africa Limited, Nuria Martinez de Velasco



On 15th October 2021, the Chief Executive Officer Torrents East Africa Limited, Nuria Martinez de Velasco paid a visit to the university and a courtesy call to the Vice Chancellor to discuss future collaborations and partnerships.







2021/2022 First Years Matriculation Ceremony

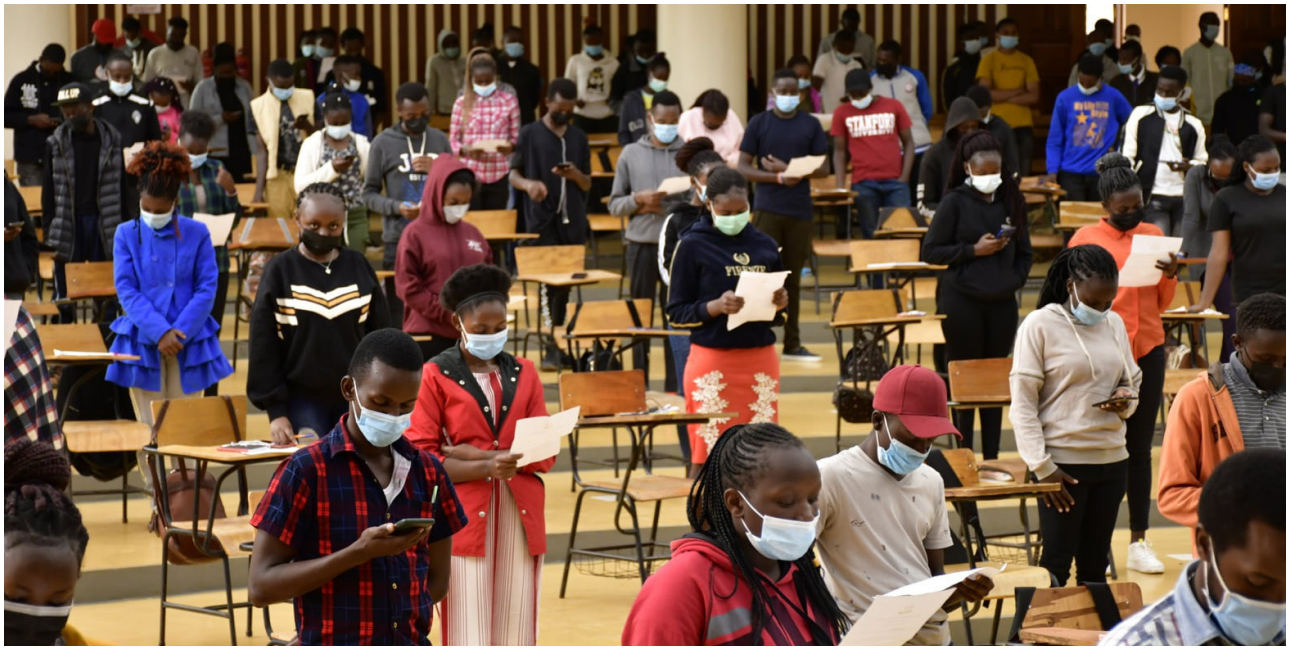
After reporting on 4th October 2021, Tuesday 12th October 2021 marked the climax of the 1st Year Students orientation with a Matriculation Ceremony where the Vice Chancellor Officially welcomed them into the University.Matriculation ceremonies are a significant tradition among Universities across the world. It is during such occasions that new students are formally admitted to the University.

During the ceremony, the First Years took the matriculation pledge demonstrating their formal welcome into the University and solemnly declared, under oath, their loyalty to the University and to comply with the various guidelines and policies governing the Institution.

We welcome all the first year students to the fraternity and wish them every success in their studies and a great stay at the University.







DeKUT produces the best during the Startup Weekend that was held at the University premises



As a Technological University with a main focus on building capacity through quality education and creating an environment that engenders research, innovation, and technology development towards producing relevant human resources and leaders to contribute to the attainment of national development goals, we have also been keen on being an entrepreneurial university. This month, we hosted a startup weekend from Friday 8th October to Sunday 10th October 2021.

A Startup Weekend is a 54-hour's entrepreneurship educational competitive event in which groups of participants meet, pitch ideas, form teams around the ideas, and work during the weekend to develop a working prototype for presentation. During this event, participants meet and interact with mentors, coaches, investors, co-founders and sponsors ready to help them start out.

The DeKUT Startup Weekend kicked off on Friday evening with an opening remark from the Deputy Vice Chancellor, Prof. Esther Magiri and a team from Saarland University. The participants comprised of teams from Chuka University, Karatina University, Kirinyaga University, DeKUT, and Meru University. As part of day one tasks, participants had the opportunity to pitch their ideas in 60 seconds and formed teams around them to work out the selected ideas as prototypes over the next two days.

On the second day, with the help of mentors and coaches, the teams learned how to apply leading methodologies to refine their ideas into a prototype which they then presented to a panel of judges.





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The 54 hour startup weekend came to an end on Sunday afternoon with the twenty-two teams from different universities pitching their ideas to a panel of judges from Konza Technopolis Development Authority, Kenya Industrial Property Institute (KIPI) and Saarland University. The top ten positions were then selected and will be taken through an acceleration program where their ideas will be refined and linked up with businesses in the industry. The AR/VR Solutions team, an idea from DeKUT students, emerged as the best, followed by Smart Pipeline Solutions and Africana fertilizer.

We congratulate the winners and the participants.







"It is time Kenya's Universities embraced virtual reality to teach." An article by Prof. Jean Bosco, Founding Director, Virtual Machines Lab at Dedan Kimathi University of Technology



Dedan Kimathi University is in the process of developing a virtual laboratory that will not only provide access to training equipment for all students regardless of their location, but also enhance the learning process.

BY PROF JEAN BOSCO BYIRINGIRO

As the country continues to strive towards enhancing manufacturing under the Big 4 Agenda, it is important that we leverage on emerging technologies to not only make the industries efficient, but to also facilitate education in STEM programs. One of the technologies that offers great prospects in promoting STEM education is Virtual Reality (VR).

Back in the 90s, Virtual Reality was a concept that harboured its fair share of novelties amongst the "techie" community. What was only a vague concept in the 1960s by the likes of Ivan Sutherland and Mort Heilig was now coming to the mainstream masses. Granted, its main use then was as entertainment, especially in the form of gaming. Despite the hype within the mainstream space, researchers were still learning the ropes, exploring what the technology had to offer. Two decades in and VR has its place in various circles of our society, from Education, Entertainment, Medicine and Manufacturing - VR is characterised by synthetic environments that the technology aims to provide a solution for. It goes without saying that engineering demands a hands-on approach, this entails interaction with machines, visualisation of outputs, tuning of parameters among other activities. A universal issue that comes to mind is the accessibility of the physical machine. There are at least two nuances for such a case. First, in developing countries, an institution may lack machines that can be used by their students. Second, the number of machines available may be few relative to the number of students that have to use it, forcing students with no machine to watch their colleagues at work during practical lessons.

One remedy lies in the idea that VR allows for the creation of whole virtual environments which are capable of hosting three-dimensional objects as well as simulating real-world physics. Furthermore, having concurrency for multiple parties carrying out practical exercises is possible, thereby eliminating "spectators". Being able to work in an immersive environment with "virtual machines" can eliminate the need to procure new machines whose cost can

Being able to work in an immersive environment with virtual machines will eliminate the need to procure expensive machines while ensuring that

tution of higher learning. That said, how about a segue into Digital Twin, DT), similar to how VR can enhance learning, VR can also enhance Cyber-Physical systems and more importantly, Digital Twins. A DT can be simply defined as a digital replica of a physical entity that runs in synchrony with the physical entity. DTs can be considered an upgrade to SCADA systems offering more room for technical analysis and intuition. Given that Digital Twins are dependent on high volumes of data, the immersion offered by VR enhances the consumption and interpretation of these data. Furthermore, operations of machines in the field become easier and far more intuitive, to say the least, since the body motions that would have been undertaken in the field are the same in the virtual environment regardless of the operation being performed.

With all the aforementioned ideas, it is imperative that their consolidation be made to realise a Virtual Laboratory that will facilitate holistic learning and training on Mechatronic Systems. Fortunately, in the Virtual Machine Control Lab at Dedan Kimathi University of Technology, these ideologies have been part and parcel of our endeavours for over three years now. We envision a learning environment that is not constrained by the physical and excels in delivering high quality and world-class training when it comes to Industrial Automation. In 2019, Digital Twin was a prelude to our work on Virtual Reality; we explored its application in Geothermal Drilling Operations and subsequently went on to explore Digital Triplet for Control of an Elevator Security System in 2020. So far, our research has resulted in a firm foundation for the design and development of a Virtual Laboratory that will not only provide access to training equipment for all regardless of their location but also enhance the learning process. This is not science fiction but rather a revolution that is inevitable in our institutions of higher learning."

"As the country continues to strive towards enhancing manufacturing under the big four agenda, it is imperative that we leverage on emerging technologies to not only make the industries efficient but to also facilitate education in STEM programs. One of the technologies that offers great prospects in promoting STEM education is Virtual Reality (VR). As a result, we are developing a virtual laboratory that will provide access to training equipment for all students regardless of their location and enhance the learning process.

At the University's Virtual Machine Control (VMC) Lab, these ideologies have been part and parcel of our endeavors for over three (3) years now. We envision a learning environment that is not constrained by the physical yet excels in delivering high quality and world-class training when it comes to Industrial Automation. In 2019, Digital Twin was a prelude to our work on Virtual Reality; we explored its application in Geothermal Drilling Operations and subsequently went on to explore Digital Triplet for Control of an Elevator Security System in 2020. So far, our research has resulted in a firm foundation for the design and development of a Virtual Laboratory that will not only provide access to training equipment for all regardless of their location but also enhance the learning process. This is not science fiction but rather a revolution that is inevitable in our institutions of higher learning." – Prof. Jean Bosco

Read the full article here by Prof. Jean Bosco, Founding Director and Virtual Machines Lab at the Dedan Kimathi University of Technology.
https://nation.africa/.../it-is-time-kenya-s-universities...
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