NEWSLETTER

African Centres of Excellence

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Headline

UR's GIIH Innovation Week: Rwanda's innovation model, a unique case for Africa's future

The University of Rwanda in collaboration with the African Centre of Excellence in Energy for Sustainable Development (ACEESD), through Grid Innovation and Incubation Hub (GIIH) is hosting the second Innovation Week to discuss issues pertaining to innovation in Rwanda and beyond.

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UniPod Rwanda inauguration marks a milestone at UR Innovation Week 2023

Gaspard Twagirayezu, the Minister of Education on Friday November 10, inaugurated a University Innovation Pod (UNIPOD), a United Nations Development Programme (UNDP) funded initiative, aimed at promoting innovation, inter-disciplinary research and nurture the next generation of innovators and entrepreneurs in the University.

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UR graduation: Inside the African Centre of Excellence in Data Science

Thousands of University of Rwanda graduates, along with their friends and families, gathered on Friday, November 17, to celebrate UR's ninth graduation ceremony at Ubworoherane Stadium in Musanze District, Northern Province.

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Education Minister calls on 8,321 graduates to tap into new technologies

Minister of Education Gaspard Twagirayezu urged graduates to stay curious and adaptable to be able to cope with the ever-growing technology. The call was made on 17 November 2023 during the 9th UR Graduation ceremony held in Musanze District, Northern Province.

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UR Innovation Week: Eight innovative projects from AI and IoT Incubation Hub get recognized

Eight innovative projects being incubated at the UR's AI and IoT incubation hub where recognized and rewarded 5,000 USD each as a startup capital to implement them. The recognition took place on 10th November 2023, during the closing of a three-day UR Innovation Week in which a university innovation Pod was inaugurated.

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ACEITLMS held a workshop to reviews its 4 MEd programs

From 13th to 15th December 2023, academic from the African Centre of Excellence for Innovative Teaching and Learning Marhematics and Science (ACEITLMS) held a workshop to benchmark and review the four MEd programmes namely MEd in Biology Education, MEd in Chemistry Education, MEd in Mathematics Education, and MEd in Physics Education.

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Education Minister calls on 8,321 graduates to tap into new technologies

Some of ACEs gradutes

Minister of Education Gaspard Twagirayezu addressing graduates

Minister of Education Gaspard Twagirayezu urged graduates to stay curious and adaptable to be able to cope with the ever-growing technology. The call was made on 17 November 2023 during the 9th UR Graduation ceremony held in Musanze District, Northern Province.

The event saw 8,321 graduating students among them 221 graduated with diplomas, while 7,435 were conferred with advanced diplomas and Bachelor's degrees. 627 graduating students were conferred with postgraduate certificates, diploma and master's degrees and 38 were conferred with doctoral degrees.

Among them, 30 PhD candidates and 172 Master's students were from the Four Centres of Excellence.

In his address, Minister of Education hailed the role of UR in the transformation journey of the Country having increased its centers of excellence and its contribution to research ecosystem.

He urged graduates to be adaptable to the evolving technologies which, according to him requires every one to be agile.

"I Encourage you to reflect on values that have guided you through this academic journey. The Resilience, curiosity and search for knowledge. These qualities will continue to serve well in your respective journey ahead. Embrace new opportunities, stay curious and be adaptable (...) The ability to navigate the change will be very crucial", he said.

On the other side, the UR Vice Chancellor, Prof. Kayihura Muganga Didas said that graduates were equipped with knowledge, skills, and the determination to make a positive impact in the society and beyond, adding that they have to embrace the challenges that lie ahead and use their education as a tool to effect change, foster innovation, and promote inclusivity.

57 master's and 17PhD graduates were from ACEITLMS

Students who graduated pledged to use their skills in addressing societal challenges.

Lindizgani Kingstone Ndove, graduated in Data Science. She already created a machine learning model to aid farmers. Her innovation allows farmers to capture images of tomato diseases on their farms and identifies these diseases, offering guidance for production strategies.

"In Malawi, many farmers lack technical knowledge, this device proves invaluable by providing specific disease information, and the move aims to boost the overall farm production," she said.

Among graduates, 127 are from 20 nationalities, namely Cameroon, Eritrea, Ethiopia, Kenya, Nigeria, South Sudan, Sudan, Tanzania, Democratic Republic of Congo (DRC), Malawi, Burundi, China, Mali, Namibia, Peru, Sierra Leone, Somalia, Uganda, Zambia and Zimbabwe.

During this event the best performers were rewarded with full time employment, paid internships, scholarships among other incentives. As it has been in UR culture, all graduates received their degree certificates on the graduation day.

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UR's GIIH Innovation Week: Rwanda's innovation model, a unique case

Some of panelists during the UR-GIIH Innovation week

The University of Rwanda in collaboration with the African Centre of Excellence in Energy for Sustainable Development (ACEESD), through Grid Innovation and Incubation Hub (GIIH) is hosting the second Innovation Week to discuss issues pertaining to innovation in Rwanda and beyond.

This event, held in partnership with local and international partners, coincides with the Global Entrepreneurship Week (GEW) in Rwanda themed "Entrepreneurs Thrive Here" and hosted by JASIRI. UR plays a big role in GEW as one of its key partners.

The event brought together over 250 delegates, including innovation experts and stakeholders from Rwanda and the global entrepreneurship network.

Under the theme "Scaling up university enabled innovation for a thriving Rwanda and Africa", participants from the academia, public and private sectors, policymakers, and young innovators, engaged in discussions about opportunities and priorities in innovation that can address challenges, create impact, and contribute to the national strategy for transformation, vision 2050 and the Sustainable Development Goals (SDGs).

The event included time for panel discussions where experts and innovators addressed various challenges and attempted to find solutions in a way that is easily understandable and packed with essential information most especially for young people.

Pascal Nyiringango, the Head of Grid Innovation and Incubation Hub at the African Centre of Excellence in Energy Sustainable Development, said that the graduation of most start-ups and their survival rate, is very low.

Some of participants during the UR-GIIH Innovation week

"This is a big challenge," he said.

"The reason is actually coming from a couple of reasons but the most tangible one is that when you look at our students, they mostly run businesses jointly with somebody who is helping from outside or initially working on their own. Majority of them have no clue of what is happening in the market," he added.

"Therefore, they are lacking awareness, if I can say, of what they are doing and should be demand-driven, not supply-driven."

Nyiringango said "the scariest thing is running a business with a capital that is very expensive to repay. It will be very hard to run it as a new entry while paying the interest rate at 18 percent and sometimes even beyond. Most funders like banks and micro finance should consider lowering the interest for the most start-ups."

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UniPod Rwanda inauguration marks a milestone at UR Innovation Week 2023

Minister of Education Gaspard Twagirayezu along with UNDP Representative Maxwell Gomera officially opening the UniPod

Gaspard Twagirayezu, the Minister of Education on Friday November 10, inaugurated a University Innovation Pod (UNIPOD), a United Nations Development Programme (UNDP) funded initiative, aimed at promoting innovation, inter-disciplinary research and nurture the next generation of innovators and entrepreneurs in the University.

The event held at College of Science and Technology (UR-CST), which was one of key activities to mark the second UR Innovation Week, saw young innovators presenting innovative solutions to diverse societal challenges. 18 outstanding projects were recognized and awarded. 8 of them focusing on AI and Internet of things got Rwf5 million each while the remaining ones focusing on different other domains were awarded from Rwf5 million to Rwf1 million

The groundbreaking moment on the sidelines of the University of Rwanda Innovation Week 2023, brought together dignitaries including the Ministry of Education, UNDP representatives, partners, and various stakeholders, including University of Rwanda academic staff and students.

During the official launch, Hon.Twagirayezu said, "Investing in our people is investing in the future of our nation. This maker-space bridges the gap between our schools and the community."

"The country's ambition is to become a model innovative society, and that journey is now. People who make this journey a reality are students," he said, urging them to connect their visions to societal problems."

"You should not count yourselves out of what is happening in this world," he added, recommending them to utilize the space effectively, innovate more and be available anytime." he added.

The winning students shared their journeys and motivations behind their solutions. Among the winners is Marie Ritha Umutoni, a final year student at UR, focusing on Embedded Computing Systems at the African Centre of Excellence in Internet of Things (CEIoT). She won an award in Internet of Things (IoT) and AI, leading her startup, 'Ibaba Intelligence Solutions'.

She developed a security system for home surveillance and proximity detection in unsafe areas. It uses inexpensive, non-intrusive components to identify moving objects like humans, animals, and vegetation.

Once a motion is detected, the system can trigger actions like sounding an alarm or notifying owners via SMS or a call to alert them of a potential intruder. To achieve real-time, on-the-edge classification of moving objects, she cleverly combined analog Passive Infra-Red (PIR) sensor data with TinyML inference. This ensures high accuracy and low latency for efficient detection and classification of various moving objects.

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Maxwell Gomera testing one of the equipment in the UniPod

Equally, Emmanuel Niyibikora, a crop science student at UR, Busogo campus, developed a unique project called 'Hair Wastes Shoe Cream'. After observing the wastage of salon hair clippings, he decided to recycle them into a distinctive black shoe cream. His product is a semi-solid, multipurpose product and expected to solve a couple of market demands, especially reducing shoe cream import quantity.

Furthermore, Gasana BisetsaJuruyishya, a master's student, whose project is named 'Farm Vision', the goal is to address challenges in the agricultural sector by creating a system that enables farmers to forecast and monitor the health status of their crops.

The device, which can be installed in the farm, utilizes an AI model to capture and analyze images, identifying potential issues such as pests. Farmers will be receiving notifications, allowing them to take timely action without physically visiting the farm, streamlining crop management and enhancing overall efficiency in agriculture.

Shauri Kalibatha Jonathan, a student in mechanical engineering manufacturing, IPRC Ngoma, has developed 'Re-Banatex'. This innovative project focuses on recycling banana trunks into fashion products such as leather, garments, bags, and hair extensions. The goal is to contribute to Rwanda's growing fashion industry, creating job opportunities for youth and increasing income for farmers.

Maxwell Gomera, the UNDP Rwanda Representative shared that for far too long, Africa has been peripheral to the knowledge economy. "Not because we are not contributing, but because we have allowed ourselves to be placed where we are," he said.

Gomera mentioned that, Universities in Africa have considered their core business is only 'Teaching' and 'Research' which never solved today's problems that they account for. However, this must change today and it is possible as students showed their potential that they can do even more."

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UR graduation: Inside the African Centre of Excellence in Data Science

Lat year, among graduates, ACE-DS had 43 at the Master's level and 3 at the PhD level

Thousands of University of Rwanda graduates, along with their friends and families, gathered on Friday, November 17, to celebrate UR's ninth graduation ceremony at Ubworoherane Stadium in Musanze District, Northern Province.

The event saw 8,321 students graduate from the UR's six colleges; 5,063 males and 3,258 females received various degrees from diplomas to PhDs.

Out of the 8,321 graduates, 221 received diplomas, while 7,435 were conferred with advanced diplomas and Bachelor's degrees. In addition, 627 received postgraduate certificates, diplomas, and Master's degrees. The graduation ceremony also honoured 38 students with Doctor of Philosophy (PhD) degrees.

The African Centre of Excellence in Data Science (ACE-DS) is located at the University of Rwanda in the College of Business and Economics (CBE) and was founded on October 17, 2016. ACE-DS is part of the African Centres of Excellence project (ACE II), which is funded by the World Bank for Higher Education in Eastern and Southern Africa.

UR hosts four of these centres, aiming to promote excellence in higher education across Eastern and Southern Africa. ACE-DS trains data scientists and researchers through post-graduate training, short courses and collaborative applied research.

Among the graduates, ACE-DS had 43 at the Master's level and 3 at the PhD level.

"Javan Juma, a Master's graduate in Data Science from ACE-DS, emphasised the application of data science models in his thesis, specifically focusing on insurance penetration and the collaboration between insurance and microeconomic variables".

He advocated for the use of supervised machine learning models to explore new techniques that could uncover intricate relationships between these variables.

Juma recommended increased government investment in computers and ensured data availability to support students working on similar projects, emphasising collaboration with industries to enhance research capabilities.

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Some of ACE-DS graduates

Lindizgani Kingstone Ndove from Malawi, a graduate with a Master's in Data Science specialising in biostatistics, created a machine-learning model to aid farmers. Her innovation allows farmers to capture images of tomato diseases on their farms and identify these diseases, offering guidance for production strategies.

"In Malawi, many farmers lack technical knowledge. This device proves invaluable by providing specific disease information, and the move aims to boost the overall farm production," she said.

Ndove drew inspiration from her academic skills acquired from UR and observations of farming productivity in Malawi, aiming to develop something beneficial to her country and Africa as a whole.

Gaspard Twagirayezu, the Minister of Education, presided over the graduation ceremony. He congratulated the university administration, graduates' families and friends for their unwavering commitment and remarkable achievements.

He said: "Today we are celebrating your commitment to education and pursuit of knowledge. Your success is a reflection not only of your individual efforts but also of the collective dedication of your professors, mentors and the entire academic community.

"The UR's 9th graduation is a good opportunity to reflect on the progress made over a decade. It has grown, increased its Centres of Excellence, expanded its partners and collaborators and overall contributions to the research eco-system.

"The graduation of 38 PhDs we just witnessed and a growing number of international students are just examples we can cite today.

"As we step into the next decade, the evolution of technology, the dynamics of globalisation and shifting social economic landscapes, we demand a fundamental thinking of the role universities play in shaping our society."

Twagirayezu emphasised that "UR stands at a critical juncture where adaptation, innovation and forward-thinking strategies are imperative. The government will keep supporting the university's efforts to put in place forward-looking management structures, relevant programmes, designs and sustainable funding mechanisms to improve services to students and alumni."

"I encourage you [graduates] to reflect on the values that have guided you through your academic journey. Resilience, curiosity and thirst for knowledge. These qualities should continue to serve you well on your respective path whether in the career or further academic pursuit," he said.

The College of Education (CE) boasted the highest number of 3,591 graduates receiving their degrees, followed by the College of Medicine and Health Sciences (CMHS) with 1,361. The College of Science and Technology came third with 1,323 graduate students, while 1,080 are from the College of Business and Economics (CBE). The College of Agriculture, Animal Sciences and Veterinary Medicine and the College of Arts and Social Sciences (CASS) had 550 and 416, respectively.

The graduation also saw the awarding of degrees to 127 international students from 20 nationalities; Cameroon, Eritrea, Ethiopia, Kenya, Nigeria, South Sudan, Sudan, Tanzania, Democratic Republic of Congo (DRC), Malawi, Burundi, China, Mali, Namibia, Peru, Sierra Leone, Somalia, Uganda, Zambia and Zimbabwe.

UR Innovation Week: Eight innovative projects from AI and IoT Incubation Hub get recognized

UR Deputy Vice Chancellor for Finance awarding one of the best innovators from the hub

Marie Ritha Umutoni, one of innovators receiving a cheque from one of key partners

Eight innovative projects being incubated at the UR's AI and IoT incubation hub where recognized and rewarded 5,000 USD each as a startup capital to implement them. The recognition took place on 10th November 2023, during the closing of a three-day UR Innovation Week in which a university innovation Pod was inaugurated.

These projects were rewarded after they were presented to experts and found promising to be solutions to diverse societal challenges.

These innovative projects are: Rwanda Drone Innovation, Ibaba Intelligence Solutions, Smart Devise for Electricity Usage, Fraud Detection and Prevention, Farm Vision, Machine Vision based Agrculture drone, Baby Nest Project, Smart Mining Jacket based on IoT, and Made in Rwanda Silar Powered Digital Smart Storage Machine Rwanda Fridge.

Gasana Bisetsa Jururyishya, from ACEIoT who is graduating this year, whose project is named 'Farm Vision', said the goal is to address challenges in the agricultural sector by creating a system that enables farmers to forecast and monitor the health status of their crops. His device, which can be installed in the farm, utilizes an AI model to capture and analyze images, identifying potential issues such as pests.

"Farmers will be receiving notifications, allowing them to take timely action without physically visiting the farm, streamlining crop management and enhancing overall efficiency in agriculture", he said.

Marie Ritha Umutoni is another innovator who completed her studies and she is graduating this year. She focused on Embedded Computing Systems at the African Centre of Excellence in Internet of Things (CEIoT). She developed a project she called 'Ibaba Intelligence Solutions'.

She developed a security system for home surveillance and proximity detection in unsafe areas. It uses inexpensive, non-intrusive components to identify moving objects like humans, animals, and vegetation. She said, "once a motion is detected, the system can trigger actions like sounding an alarm or notifying owners via SMS or a call to alert them of a potential intruder. To achieve real-time, on-the-edge classification of moving objects, she cleverly combined analog Passive Infra-Red (PIR) sensor data with TinyML inference."

AI and IoT incubation Hub was established at UR's African Centre of Excellence in Internet of Things under the 'IoT and AI Applied Research Results Commercialization through Incubation Hub project in January 2023. This project aims at establishing an Internet of Things (IoT) and Artificial Intelligence (AI) based applied research incubation hub which is expected to facilitate the transfer of applied research prototypes and knowledge from IoT lab to market and commercialization through academia-industry collaboration. NARADA LTD, FabLab are the private industry partners that are involved in the project implementation. The network of partners is being expanded to include more private and public partners at national and international levels.

This project will see 24 prototypes developed and 8 solutions commercialized, ready to respond to societal problems in Rwanda.

Funded by Research and Innovation Systems for Africa (RISA), a program of the UK Foreign, Commonwealth, and Development Office(FCDO) that aims to strengthen the research and innovation ecosystem in Africa.

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Over 100 UR statistics students complete data analysis training

Participants during a session

A total of 108 students from the Applied Statistics Department at the University of Rwanda (UR), on December 13, concluded a three-day boot camp focused on training in data analysis using Python.The training programme was organised by the African Centre of Excellence in Data Science (ACE-DS) in partnership with the Applied Statistics Students Association (ASSA), with support from Cenfri, which facilitated the engagement of experienced trainers.

Python is as a computer programming language that is used to create various programmes, from simple scripts to complex software applications and websites.

The primary objective of the boot camp was to empower participants with fundamental skills in proficient data handling, manipulation, and analysis using Python.

According to Charles Nzaramyimana, the Administrator in Charge of Postgraduate Studies and Research at ACE-DS, the boot camp aimed to enhance the skills of students in various applied statistics fields.

He said the boot camp not only aimed at upgrading the skills of the students, but also prepared them for the labour market.

"We expect these students to upgrade their level of analysing data, but also to satisfy or meet the labour market as they graduate," he explained. Nzaramyimana further highlighted expectations for trainees to apply for the master's programme at ACE-DS after completing their undergraduate studies.

Festus Niyonkuru, the President of ASSA, highlighted that the idea for the boot camp arose from observing gaps in skills during an academic internship where students faced challenges, especially with Python, as it wasn't initially taught.

To address that, they sought support from ACE-DS and Cenfri to organise the boot camp to bridge the gap and explore data analysis using Python. Niyonkuru expressed grati-

Participants took a group photo after completing a training

tude for the opportunity, highlighting its success, leading to extended opportunities.

"We believe our members are now open to exploring Python more and have gained confidence to apply for opportunities in different institutions," he said.

Gisele Murebwayire, one of the trainees, is a Level 3 student pursuing a degree in Applied Statistics.

She said that she learned the basics of Python for the first time, covering topics such as how Python works, its libraries, and syntax. Murebwayire emphasised the importance of Python in data analysis and expressed the intention to continuously use it.

"Python is one of the fundamental programming languages most data analysts use. I will use it more frequently now that I know what it's about," she said.

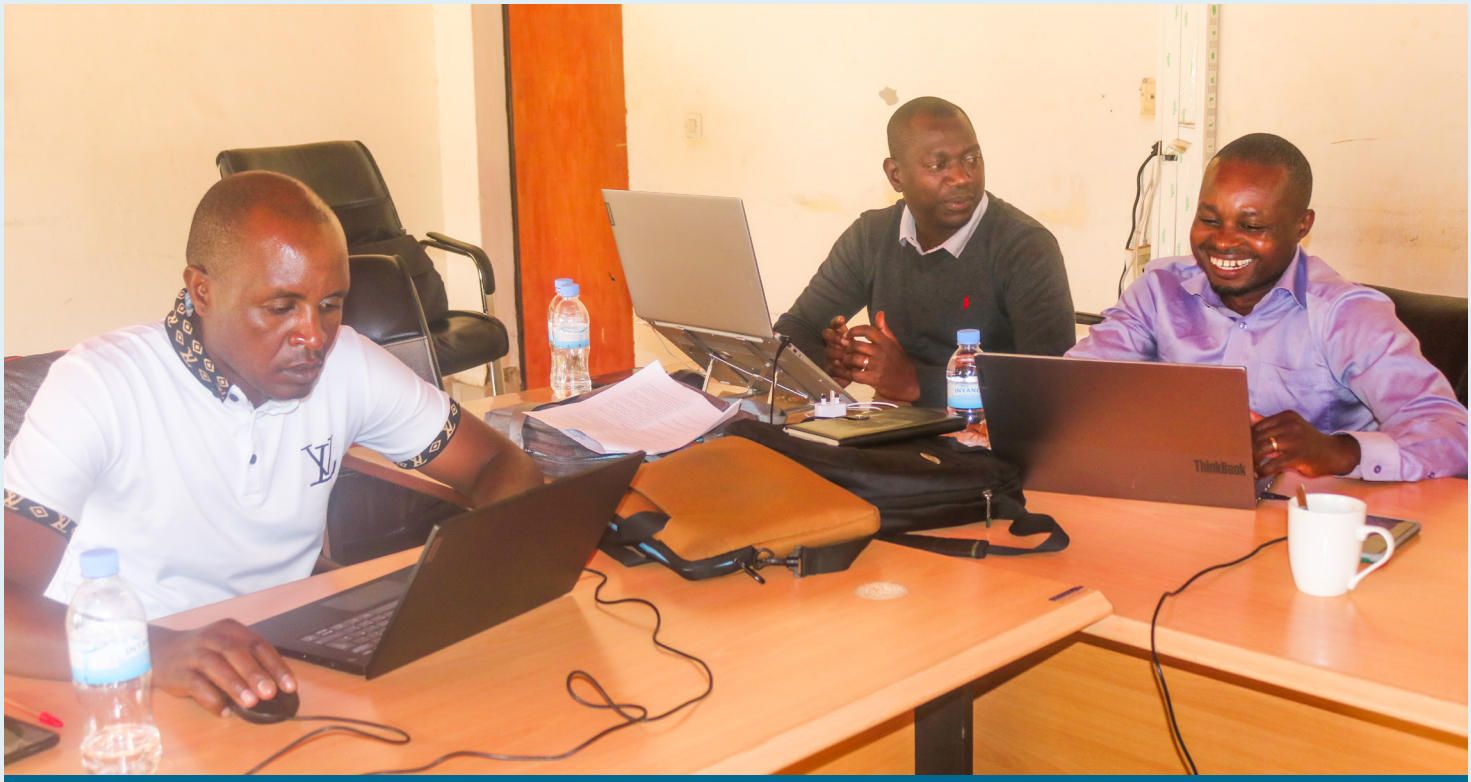
Murebwayire also highlighted that the university's module on statistical computing only covered theoretical concepts, making the practical application learned in the boot camp a valuable addition to their education.

François Twizerimana, another applied statistics student at UR said she learned the use of Python libraries, along with data visualisation techniques. He highlighted the significance of Python programming due to its clarity, accessibility, and cost-free nature compared to other tools.

"Everyone for free can access Python compared to other statistical tools that are somehow expensive. As students, we need things we can use without paying, and Python provides those data and other materials we need," he said.

Twizerimana added that he plans to further explore and apply Python through online resources. He called for more practical training opportunities to bridge the gap between theoretical knowledge and real-world application, aiding students in preparing for the job market.

ACEITLMS held a workshop to review its 4 MEd programs



Participants during the workshop

From 13th to 15th December 2023, academic staff from the African Centre of Excellence for Innovative Teaching and Learning Marhematics and Science (ACEITLMS) held a workshop to benchmark and review the four MEd programmes namely MEd in Biology Education, MEd in Chemistry Education, MEd in Mathematics Education, and MEd in Physics Education.

The review aims at aligning the learning outcomes and content with the recent review made to both secondary and undergraduate programmes which were benchmarked nationally, regionally and internationally. The review was also in the framework of the process of international accreditation that these programmes are undergoing. Particular attention was paid to comments from the international accrediting agency (AQAS)

The workshop was conducted through five sub-groups, each tasked to review one MEd programme

In addition to the update of the programme specifications, the focus of the review was on the allocation of study and teaching hours, the description of aims and indicative content of the modules, the graduate attributes & learning outcomes, the learning , teaching and assessment strategies as well as the indicative resources but more importantly an emphasis is expected to be put on practical aspect for science modules.

Participants during the workshop

As a result, the existing modules in the programmes were modified in terms of content, learning outcomes and in number of credits in respect to the current General Higher Education Sub-Framework of the Rwanda qualifications framework.

Participants during the workshop

During the review, reviewers took into consideration the current context of teaching and learning in respect to the Higher Education Council (HEC) standards with flexibility to accommodate regional academic qualifications.

www.aceitlms.ur.ac.rw

Internet of Things graduates lead innovation, forge future with practical solutions

Some graduates from ACEIoT pose with the Centre Director Assoc. Prof. Damien Hanyurwimfura

The African Center of Excellence in Internet of Things (ACEIoT) within the University of Rwanda (UR) has been a breeding ground for innovative minds who are ready to forge the future with practical solutions and solve real-world problems within their communities.

This was observed during the UR's 9th graduation ceremony held on November 17, at Ubworoherane stadium, Musanze district in Northern province.

Among the 8,321 graduates, 43 individuals with a background in IoT have been showcasing remarkable projects and sharing invaluable experiences especially in their final year thesis.

This was marked on November 10, during the inauguration of UniPod, a United Nations Development Programme (UNDP) African Regional Bureau initiative aimed at promoting innovation, inter-disciplinary research, and nurturing the next generation of innovators and entrepreneurs in university.

Damien Hanyurwimfura, an Associate Professor and the Acting Director of the African Center of Excellence in Internet of Things (ACEIoT), College of Science and Technology (CST), UR, emphasized the significance of hands-on learning and practical applications in IoT education.

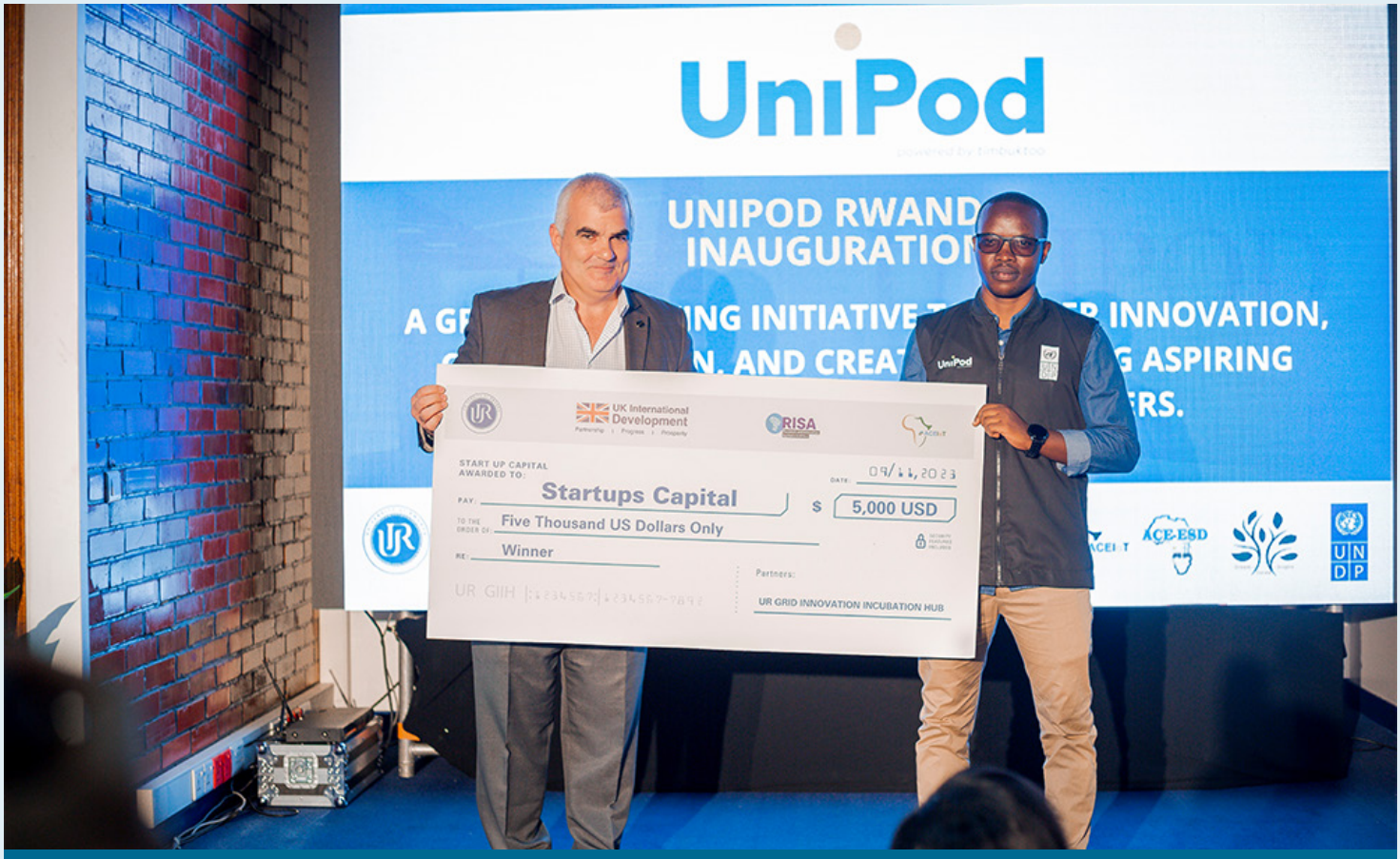
He said: "The internet of things, artificial Intelligence and robotics are emerging technologies that are impacting the lives of people, changing the way things are done and improving people's lives."

"The curriculum offered in the center of Internet of Things," he continued, "is evolving and updated with the new technology to assure that the students get the updated knowledge to respond to people and business needs."

He noted: "There are many projects which are developed by students and faculty members in response to the call for applications targeting the current needs on the market. Those are the projects funded by the external partners."

"Therefore, the center collaborates with different partners private and public, local and international who support the center in enhancing the quality of teaching and research offered to the students," he said.

www.aceiot.ur.ac.rw



One of innovators from AI and Incubation Hub got recognised during the UR-GIIH Innovation week

Hanyurwimfura added: "Locally, the center collaborates with private industries such as FabLab, ICT Chamber, Digital Umuganda, Narada LTD, STES Group to address the local societal challenges in joint research collaborations.

They offer internship placement to the center students.

In public institutions, the center collaborates with the National Council for Science and Technology (NCST), Rwanda Development Board (RDB), and Carnegie Mellon University, Rwanda Information Society Authority (RISA) and many more.

"Some of them like NCST provided grant funds to implement the project solving local challenges," he noted.

Other implemented projects are funded by international funders like PASET, Chemonics, Ruforum, Horizon, US embassy, Enabel, to mention but a few. Meanwhile, some students echoed similar sentiments, highlighting how their projects not only honed their technical skills but also empowered them to solve real-world problems within their communities.

Among them is Gasana Bisetsa Juruyishya, a Masters graduate in IoT, specialized in Wireless Intelligent Sensor Networking whose project is named 'Farm Vision', The goal of his creation is to address challenges in the agricultural sector by creating a system that enables farmers to forecast and monitor the health status of their crops.

The device, which can be installed in the farm, utilizes an AI model to capture and analyze images, identifying potential issues such as pests. Farmers will be receiving notifications, allowing them to take timely action without physically visiting the farm, streamlining crop management and enhancing overall efficiency in agriculture.

Equally, Zephaniah Bizimana also graduated in IoT, developed 'Smart Device for Electricity Usage, Fraud Detection and Prevention'. This device aimed at capturing the customers who may steal electricity by reporting them, and start counting the stolen electricity.

"This device shows the address of the fraudsters and it is also able to trace which device (appliance) is consuming much electricity," he said.

www.aceiot.ur.ac.rw

6 PhD candidates successfully defend their research theses

ACEITLMS

Mr. Robert Kirya Kent

Developing Circular Motion Concept Inventory for Evaluating Understanding of Students of Ugandan Secondary Schools

ACEIoT

Mrs. Calorine Katushabe

Real Time Air Quality Monitoring and Development of an Open Platform and 3D Lung Display to Create Awareness on its Health Impact

ACEIoT

Mr. Elias Ntawuzumuns

IoT Powered Smart Beekeeping Realisation of an Intelligent and energy efficient remote monitoring System for Increased Honey Production

ACEIoT

Mrs. Florence Mukamanzi

IoT based Source Location Privacy Preservation: the Case of Habitat Monitoring

ACEIoT

Mrs. Claudia Abineza

Design of Prediction Model and Decision Support System System for COPD Patients Management Based on a Pulse Oximetry Protocol

ACEIoT

Mrs Christine Musanase

Remote Smart Soil Analyser and Crop Prediction using Machine Learning Approach in Rwanda

Our respective programs

African Centre of Excellence in Data Science (ACEDS) based at UR-College of Business and Economics, Gikondo

We have Day and evening Programs:

- Master/PhD of Science in Data Science in Data Mining
- Master/PhD of Science in Data Science in Econometrics
- Master/PhD of Science in Data Science in Biostatistics
- Master/PhD of Science in Data Science in Demography
- Master/PhD of Science in Data Science in Actuarial Sciences

N.B: All PhD programs are by research.

In partnership with Data Science Council of America (DASCA), we also offer certified professional Short courses:

a. Associate Big Data Engineer (ABDE)
b. Senior Big Data Engineer (SBDE)
c. Associate Big Data Analyst (ABDA)
d. Senior Big Data Analyst (SBDA)
e. Senior Big Data Analyst (SBDA)

More details: www.aceds.ur.ac.rw

African Centre of Excellence for Innovative Teaching and Learning Mathematics and Sciences (ACEITLMS) based at UR-College of Education, Rukara

We have Day and Weekend Programs:

- Master of Education in Biology Education
- Master of Education in Chemistry Education
- Master of Education in Physics Education
- Master of Education in Mathematics Education
- PhD in Biology Education
- PhD in Chemistry Education
- PhD in Physics Education
- PhD in Mathematics Education

N.B: All PhD programs are by research.

More details: www.aceitlms.ur.ac.rw

African Centre of Excellence in Internet of Things (ACEIoT) based at UR-College of Science and Technology, Nyarugenge

We have the following Programs:

- Master/PhD in Embedded Computing Systems (ECS)
- Master/PhD in Wireless Sensor Networking (WSC)

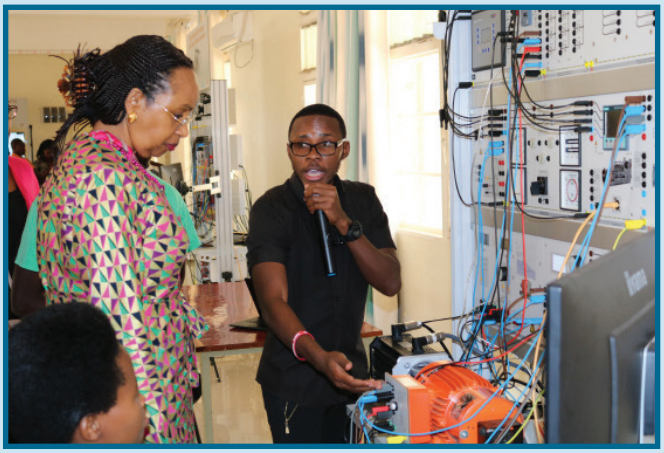
N.B: All PhD programs are by research.

Short courses:

a. Rapid Prototyping
b. Blockchain Fundamentals and Applications
c. Drone fundamentals and applications
d. LoRA technologies
e. IEEE GRSS Drone Sensor Deployment

More Details: www.aceiot.ur.ac.rw

African Centre of Excellence in Energy for Sustainable Development (ACEESD) based at UR-College of Science and Technology, Nyarugenge



We have the following Programs:

- Master/PhD of Science in Energy Economics
- Master/PhD of Science in Renewable Energy
- Master/PhD of Science in Electrical Power Systems

N.B: All PhD programs are by research.

Short courses:

Power Engineering, Smartgrid, Microgrid

More Details: www.aceesd.ur.ac.rw

Adresses and Contacts

African Center of Excellence in Data Science (ACE-DS)

Email: aceds@ur.ac.rw
Website: wwww.aceds.ur.ac.rw
Phone: + 250 788 521 896
Twitter: @UR_aceds
Facebook: ACE in Data Science

African Center of Excellence for Innovative Teaching and Learning Mathematics and Science (ACEITLMS)

Email: wrceaceitlms@gmail.com
Website: www.aceitlms.ur.ac.rw
Phone: +250 788 221 035
Twitter: @aceitlms
Facebook: ACE for Innovative Teaching and Learning Mathematics and Science

African Center of Excellence in Energy for Sustainable Development (ACEEDS)

Email: aceesd@ur.ac.rw
Website: www.aceesd.ur.ac.rw
Phone: +250 785 923 610
Twitter: @ace_esd
Facebook: ACE in Energy for Sustainable Development

African Center of Excellence in Internet of Things (ACEIOT)

Email: aceiot.cst@gmail.com
Website: www.aceiot.ur.ac.rw
Phone: +250 783 016 900
Twitter: @ACEIoT_UR
Facebook: African Center of Excellence in Internet of Things-ACEIoT