CSC Newsletter

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Re-Engineering Nigerian Universities Using Global Ranking Models

The advent of university education in Nigeria emanates from efforts made to encourage the government in producing high-level manpower for the development of the nation. Till date, there are over 170 universities in Nigeria comprising public (federal and state) and private universities. However, the population of students seeking admission into universities annually increases as the number of universities licensed by the regulatory body, the National Universities Commission (NUC) also increases.

Prof. Olusegun Folorunso,
Head, Department of Computer Science
FUNAAB

It is a known fact that when NUC awards universities operating licenses, some institutional mandates document are required. The most commonly-used institutional mandates in Nigeria are teaching, research and community engagements also known as the tripod mandate. However, two questions are pertinent to ask: (i) Why are many Nigerian universities not listed on the league table of most academic-ranking bodies? (ii) Why are Nigerian universities not comparable with world-class universities? It is, therefore, necessary to examine teaching and learning strategies, research gaps, community engagement challenges in terms of the town and the gown relationships by building synergy between the academia, industries and government-known, otherwise called the triple helix.

Indicators used by most of the ranking bodies such as the Shanghai Academic Ranking of World Universities (ARWU), Times Higher Education (THE), World University Rankings, QS World University Ranking and Webometric Ranking of World Universities (As shown on Table 1-4 below) and their effects on most world-class universities such as Massachusetts Institute of Technology (MIT), Harvard, Oxford, Yale and Princeton, among others were centred on critical components of the tripod mandate. These have raised concerns about institutions in Nigeria not performing well in academic rankings and hence, the need for the re-engineering of institutions in Nigeria for global relevance.

Michael and Boniface (2014) define re-engineering as a process involving scientific mode of well-thought-out and properly-organised, restructuring, re-planning, redesigning, re-arranging or rebooting events or issues for better results, condition or improved performance while the ultimate expectation is to have the best outcome on one's investments. This implies that the tripod mandate of teaching, research and community engagements have to be restructured, re-planned, re-designed, and re-booted for better results in our university system before catching up on the ranking league table. There are other driving-forces that aid ranking in which higher institutions of learning in Nigeria has to favourably looked into to attain global relevance. The various university managements should look for ways of changing the landscape of teaching and learning in their universities.

The on-going Coronavirus disease (COVID-19) has forced all into adopting electronic learning. Even after the pandemic, our new way of teaching wouldtend towards blended learning. Other issues that have to be looked into are innovative practices in teaching, adoption of multiple intelligence system, mentorship, pedagogies and the dynamics in teaching methods. In achieving proper e-learning, our teaching contents, like lecture notes need to be converted into e-content using audio files, word processing documents, video files and synchronised presentations. Table 5 and 6 are mostly required in webometric ranking of world universities.

Ranking Models	Ranking Indicators(Methodology)	Mandate Required(T,R, C)-Output	Website
Shanghai Academic Ranking of World Universities (ARWU)	ARWU uses six objective indicators to rank world universities, - including the number of alumni and staff winning Nobel Prizes and Fields Medals, - number of highly cited researchers selected by Clarivate Analytics, - number of articles published in journals of Nature and Science, - number of articles indexed in Science Citation Index - - Expanded and Social Sciences Citation Index, and per capita performance of a university. - More than 1200 universities are actually ranked by ARWU every year and the best 500 are published.		www.shanghairanking.com/

Table 1: Comparative Analysis of Ranking Models

Ranking Models	Ranking Indicators(Methodology)	Mandate Required(T,R, C)-Output	Website
Times Higher Education (THE)	- Teaching (the learning environment) 30% - Research (Volume, Income and reputation) 30% - Citations (Research Influence) 30% - International Outlook (Staff, Students and Research) 7.5% - 5. Industry Income (Knowledge Transfer) 2.5%		https://www.timeshighereducation.com/world-university-rankings/methodology-world-university-rankings-2019
QS World University Ranking	- Academic Reputation (40%) - Employer Reputation (10%) - Faculty/ Student Ratio (20%) - Citation per faculty in Elsevier Scopus Database (20%) - International faculty ratio (5%) - International students' ratio (5%)	Teaching Teaching, and Community Engagement Research	https://www.topuniversities.com/qs-world-university-rankings/methodology
Webometrics Ranking of World Universities	- Presence -5% - Visibility -50% - Transparency -10% - (Openness) - Excellence- 35% - (Scholar)-	Research Reports E-Content Teaching Notes	www.webometrics.info/en www.webometrics.info/en/current_edition

Table 2: Comparative Analysis of Ranking Models

INDICATORS	DESCRIPTION	SOURCE	WEIGHT
PRESENCE	Size (number of **pages**) of the main webdomain of the institution. It includes **all the subdomains** sharing the same (central/main) webdomain	*Ahrefs*	5%
VISIBILITY	Number of **external networks** (subnets) linking to the institution's webpages After normalization, the average value between the two sources is selected	*Ahrefs* *Majestic*	50%

Table 3: Comparative Analysis of Global Ranking Models

INDICATORS	DESCRIPTION	SOURCE	WEIGHT
TRANSPARENCY (or OPENNESS)	Number of **citations** from **Top 100 authors** (excl. outliers) according to the source But see Transparent Ranking for additional info	*Google Scholar Citations*	10 %
EXCELLENCE (or SCHOLAR)	Number of **papers** amongst the top 10% most cited in 26 disciplines Data for the five year period **(2013-2017)**	*Scimago*	35 %

Table 4: Comparative Analysis of Global Ranking Models

e-Content Development	Tools	Remarks
Creating digital content	**Ms-Powerpoint**	To present data and information (e-content) in slides.
	Screencastomatic	To create video from your screen (i.e. record short lectures or course tours).
	Audacity	A free audio editing software to record lectures.
	YouTube	It's a video-sharing network from Google
Communicating digital content	**Google Site**	To create simple web **sites** that support collaboration between different editors.
	Blog	Website that keeps short digital contents.
	Whatsapp	To send messages, images, audio or video.
Connecting digital content	**Skype**	For instant messaging and voice chat
	LinkedIn	Professional networking website and platform for job searches.
	Research Gate	Social networking site for scientists and researchers to share papers.
	Academia	Environment or community concerned with the pursuit of research, education, and scholarship.

Table 5: E-Content Development

Collaborating digital content	**Google form**	Google form allows you to ask both **open-ended** and closed-ended questions for data gathering.
	Google doc	Google Doc can be used to import, create, edit and **update** documents and spreadsheets in various fonts and file formats, combining text with formulas, **lists**, tables and images.
	Google drive	Google drive is used to **share** files with ease.
	Google presentation	Google presentation is an online app that lets you create and format **presentations** and work with other people.

Table E-Content Development

The bedrock of any nation development rests on the level of its research breakthroughs. Researches with a positive influence on national growth and development are regularly being carried by experts in different research fields in our universities in Nigeria. Though, there are various challenges facing research in Nigerian universities such as absence of quality assurance strategy, absence of coordination strategy, mismanagement of grants/funds, absence of repository for research data and non-compliance to research ethics such plagiarism, fabrication of data, and falsification of research results. All these factors have negative effects on the acceptability of our research papers in standard international and reputable journals published in Scopus-based Institute for Scientific Information (ISI) and Nature, and among others while the pedigree of the reviewers, number of citations, and H-Index of the authors have a lot to do with the visibility of the affiliated institution of the authors. Finally, community engagements describe the collaboration between institutions of higher education and their larger communities (local, regional/state, national, global) for the mutually-beneficial exchange of knowledge and resources in a context of collaboration and reciprocity while the results of teaching and research should have direct importance on society in the form of feedbacks.

Prof. Olusegun Folorunso,
Head, Department of Computer Science, FUNAAB

Impact of COVID-19 on Cyber Security

Oreoluwa Tinubu (Mrs.)
Lecturer, Department of Computer Science, FUNAAB

The Coronavirus disease (COVID-19) has forced several organisations and individuals to embrace new practices such as social distancing, hand washing/sanitizing and remote working. Governments are reconsidering ways to ensure that their countries are stable by developing and enforcing new economic plans. Nevertheless, while the world is focused on the health and economic threats posed by COVID-19, cyber criminals around the world undoubtedly are capitalising on this pandemic. Recently, the whole world became more technology-dependent than ever. As many organisations have shifted to remote working to protect their workers while continuing to provide services to customers, they have moved the majority of their activities to the digital world thereby increasing the risk of cyber-attacks.

Suspected cyber criminals are attacking computer networks and systems of individuals, businesses and even global organisations at a time when cyber defences might be lowered due to the shift of focus to the health crisis. Cybersecurity issues influenced by the pandemic includerise in COVID-19 related phishing and ransomware attacks because there is an on-going spike in phishing, malware and attacks as faceless persons are using the pandemic as a bait to impersonate brands even though individuals are more susceptible to social engineering attacks as phishing. Spam e-mails are tricking users into clicking on links, which download malware to their computers or mobile devices. Ransomware attacks are perpetrated through e-mails containing infected links or attachments, compromised employee credentials, or by the vulnerability in the system. These have resulted in more infected personal computers and mobile devices. Not only are businesses being targeted, end users who download COVID-19 related applications are also being tricked into downloading ransomware disguised as legitimate applications.

Increased security risk from remote working/learning with many employees working from home and students learning virtually, enterprise Virtual Private Network (VPN) servers have now become a lifeline to companies/schools, and their security and availability and major focus as there is the possibility that an organisation's unpreparedness would lead to security misconfiguration in VPNs, thereby exposing sensitive information on the Internet and also exposing devices to Denial of Service (DoS) attacks. Also, some users may utilise personal computers to perform official duties and posing a great risk. Consequently, organisations should ensure that VPN services are safe and reliable. Potential delays in cyber-attack detection and response and functioning of many security teams have been impaired due to COVID-19, thereby making the detection of malicious activities difficult in responding to these activities to become more complicated while updating patches on systems would be a challenge if security teams are not made operational.

Exposed Physical Security entails the enforcement of the "work from home" policy by some organisations in Nigeria, where stable power supply and reliable Internet connection may be a luxury in some quarters, which could make employees working from public spaces to utilise power and free Internet facilities. This behaviour may inadvertently expose

computing facilities and confidential information they contain to theft or damage. Working from public spaces is, therefore, highly insecure. Influx of cyber criminals make companies to downsize their workforce to cope with the effects of COVID-19. Also, many people have lost their means of livelihood due to the various governments' restrictions across the world. This has greatly influenced the increase in the number of cyber criminals as idle people with Internet access, who have lost their jobs from the effects of COVID-19, may see it an opportunity to make a living out of the pandemic.

To take precautions against cyber-attacks, individuals should always verify the authenticity of websites before entering login details or sensitive information, download mobile applications or other software only from trusted platforms, back-up all important files while storing them independently from the system (such as cloud), ensure anti-virus software are installed on systems, and make sure that mobile devices are updated, perform regular health scans on computers and mobile devices, regularly check and update the privacy settings on social media accounts, and update passwords while ensuring strong passwords (using a mix of uppercase, lowercase, numbers and special characters), among others. To mitigate the emerging risks, organisations should ensure that remote access systems are fully patched and securely configured, review web traffic logs to monitor for the use of shadow IT (such as file sharing, video conferencing and using collaboration tools), and ensure that on-premise security controls still apply to systems when they are not on the internal network. Furthermore, they should monitor remote access systems, ensure e-mails and Active Directory for anomalous logins, make sure that remote access systems are sufficiently resilient to withstand DoS attacks and very importantly, make available the process and technology to detect and respond to cyber-attacks.

Oreoluwa Tinubu (Mrs.)
Lecturer, Department of Computer Science, FUNAAB

COVID-19 and Attacks on Critical Information Infrastructure

As the Coronavirus (COVID-19) pandemic increases the proliferation of the Internet across the continent, the rate of sophisticated cyber-attacks has intensified. The conventional remote connections into industrial control networks, to balance the recommendations of social distancing with the need to keep vital services functioning has increased the severity of attacks on Critical Information Infrastructure (CII). Great attention is now being drawn to the protection of information infrastructure that is considered 'critical' to the nation to ensure their continuous existence.

CII refers to information systems that store, process, and deliver critical services and information. CII underpins the operation of all sectors of the economy by controlling **critical** processes in governance, utilities, communications, banking and manufacturing. The interruption or destruction of the CII, which could be owned by government, institution, organisation or industries, could hinder or delay the delivery of essential services to citizens, leading to severe financial losses or death of the citizens. An attack occurs when an adversary is equipped with the desired skill set, is able to access the targeted system to exploit a known vulnerability, either a zero-day exploit or an un-patched vulnerability to disrupt, degrade or compromise the integrity of the targeted system. An

Alaba Adejimi (Mrs.)
Lecturer, Department of Computer Science, FUNAAB

active attack could occur on CII when system resources/operations are altered or affected.
Attacks on CII could compromise the availability, confidentiality, and integrity of critical information. These attacks are perpetrated through software applications, communication channel/network protocols, supply chain or social engineering. Recently, a popular Nigerian, Mr. Raymond Abbas (aka Hushpuppi) and his gang, through phishing attacks, hacked into targeted systems to gain unauthorised access to business e-mails while transferring money from victims' account to their personal accounts. Every attack on CII is directed towards a particular domain literary called attack surface by using different techniques for exploits. An attack surface is an aggregate of all the points of entry for a potential attacker and these points of entry allow the attacker to send data to the target or extract data from the target. For an attack to succeed, the attacker would adopt a path or means to gain access to the target and deliver the malicious code known as an attack vector.
Common attack vectors are web application attacks, client-side attacks, network attacks, attacks using malware and APTs, DoS/DDoS attacks, social engineering or spear phishing attacks, brute force attacks on encrypted data, man-in-the-middle attack or interception of communication channel, routing attacks, supply chain contamination, DNS attacks, and targeted attacks by evading or bypassing perimeter protection devices. It is highly important for the government, industries and organisations to ensure the security of CII and to strategic plans for contingency and recovery in case of infiltration.

Alaba Adejimi (Mrs.)
Lecturer, Department of Computer Science, FUNAAB

Artificial Intelligence: A Panacea for Poor Crop Yield

Agriculture, being a branch of science for the cultivation of crops and rearing of animals for human and industrial consumption, has gone through different stages of technological development due to man's quest to reduce human intervention while improving crops' yield. This quest had led to the invention of machines such as tractors, harvesters, planters, sprayers and the like. Although, many of these machines have greatly impacted agriculture but they are limited in performing intelligent functions such as determining of ripe fruits or crops to be harvested, selecting the most suitable soil for crops, application of the right quantity of water for irrigation, and detection of weeds during the weeding process.

Weeds are generally found among crops, competing with other plants for resources as water, nutrients, air and space. Weeds limit the growth of desired plants leading to poor crop yield and devastating losses. Consequently, farmers seek means to eliminate weeds on their farmlands through the use of herbicides and other known cultural approaches. These conventional methods are not effective for the elimination of weeds as they may have some adverse effects on the crops. To ensure precision and improved accuracy in weed detection, farmers, agricultural organisations, and research institutes are now deploying AI in developing agro-based systems, machines and gadgets to savage the negative effects of weeds.

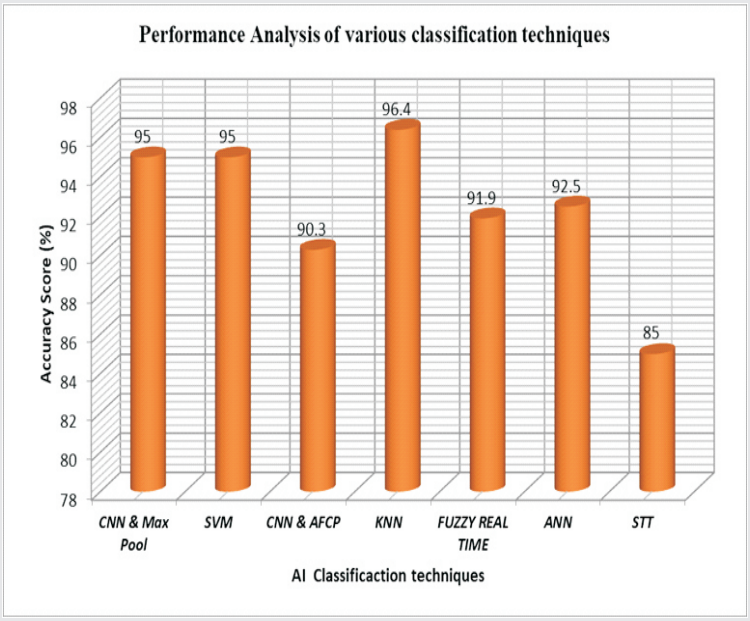
Artificial Intelligence in agriculture, a trending innovation, has potentials of taking agricultural systems to the next level. A combination of various intelligent techniques, methods, paradigms and procedures can be deployed for weed detection and these can be classified into four, namely:Image Capturing, Image Processing, Image Filtering and Image Classification.

Image Capturing: This is done at the data collection stage and involves on-site visitations to the field or farmland where the weeds are to be identified and detected. Numerous images of the area are captured with the aid of high resolution cameras either connected to the tractor, moving farm equipment or manually captured at different projection perspectives (top, front or side view) and at various illumination level, which is characterised by the condition of the day (morning, afternoon or evening). Further processing is performed on images by embedded systems to identify and detect weeds.

Image Processing: Image validity check is performed on the images to ensure that they meet with the required specifications of the system otherwise, an image conversion is necessitated to meet the required image format. Software tools such as the MATLAB, Orbit, Image J and Ilastik are used in processing the images. The backgrounds of captured images, which could hinder effective detection, can be removed using appropriate segregation techniques.

Image Filtering: This involves listing of filtering methods for sharpening, smoothing or removal of noise in images exist. A commonly-used method is the Gaussian filtering, which is efficient in noise removal and image smoothening. However, the choice of the image filtering method is dependent on the nature of input image and the intended result to be derived from the images.

Image Classification: Numerous primitive approaches have been adopted in the classification of crops and weed before the introduction of AI techniques. These primitive approaches are brain-tasking, time-consuming and less efficient, often with incorrect results. With Artificial Intelligence, a major technique for accurate classification is the Artificial Neural Network (ANN), which combines statistical techniques with machine learning to imitate human intelligence for weed classification. Weeds can be classified by learning from a collection of supplied similar or related data set. A model is thus generated whose performance can be improved by continuous training. Testing and validation can also be performed by supplying a new set of data for which classification can be done based on the information already extracted from the training data.



Several classification techniques can be employed in weed detection with varying accuracies. Artificial Intelligence would continue to play significant roles in weed detection and agriculture in general, if human efforts are consciously channelled towards creating, improving and adopting better techniques for developing techno-efficient intelligent systems to aid in agricultural-related activities.

Femi Johnson
Post Graduate Student, Department of Computer Science, FUNAAB

A Computer Laboratory: An Insight

A computer laboratory is a space which provides computer services to a defined community. Computer labs are typically provided by libraries to the public by academic institutions to students who attend the institution, or by other institutions to the public and others affiliated with the institution. While computer labs are generally multipurpose, some labs may contain computers with hardware or software optimised for certain tasks or processes depending on the needs of the institution operating the lab. These specialised purposes may include video editing, stock trading, 3D computer-aided designs, programming and Geographical Information System (GIS).

These computers are usually arranged in rows so that every workstation has a similar view of one end of the room to facilitate lecturing or presentations, or in clusters to facilitate small group work. Projectors, smart boards, scanners, printers, software and a variety of peripherals like digital cameras and camcorders are also stored in the lab. It is essential for computer labs to have two doors each, for entrance and exit. There are three major types of computer laboratories:Hardware Lab provides the students with the knowledge of computer hardware, processors, memory, motherboards, different add-on cards, and other peripherals like printers, plotters and scanners. Students are trained on the assembly and disassembly of PCs as troubleshooting of computer systems is a major activity in a hardware laboratory.

Software Lab computers in software laboratories are loaded with programming software and other application packages to help students (undergraduates and postgraduates) in their research work. Students are trained to become good programmers by coding in different programming languages. Networking Lab is a virtual cluster of multiple networking devices, including servers, clients, routers, switch and firewalls. Students are trained to install, administer and configure clients, server and the network devices that connect them to build network infrastructures for a variety of business needs from small business to large enterprises. This is where students learn many of the standard networking tools, devices, software and operating systems used to build modern day network infrastructure.

There are rules and regulations governing the use of a computer laboratory include rules that ban the use of bags, food or drinks in the lab. Laptops must always be registered before taking them into the lab. Students must wear their students' identity cards while in the lab. Computers must be shutdown properly before leaving the lab. Playing of computer games and watching of films are highly prohibited. Mobile phones should always be switched off while in the lab. Alternatively, one can use low ringtones or vibration mode only, as software should not be installed on the computers without the consent of the technologist in charge. Very importantly, the computer laboratory should be kept clean at all times.

A cross-section of students working in a computer laboratory

Akin Olubiyi
Laboratory Technologist, Department of Computer Science, FUNAAB

Tips on How to Avoid Computer Virus Infection

(1) Use Strong Passwords: Keep your data safe by creating unique complex passwords. The best passwords include a mix of numbers, letters and symbols and are at least eight characters long.

(2) Update Software: Make sure you have the latest version of all software installed on your devices because it will help to withstand the latest security threats.

(3) Use Antivirus Software: Antivirus software acts as a 'vaccine' against virtual viruses. It can identify and eliminate the threats before you are even aware of it.

(4) Use a Firewall: Ensure firewalls are enabled to provide an extra layer of protection from viruses and malware.

(5) Install a Popup Blocker: Many attacks happen through browsers. Hackers can gain access to your computer from one innocent click on the wrong ad or link. An ad or popup blocker is essential to protecting your computer's data. This would prevent any unwanted pages from opening automatically.

Oluwatoyin Olowofeso (Mrs.)
Laboratory Scientist, Department of Computer Science, FUNAAB

Aligning IT to Support SDGs

In the previous editions of CSC Newsletter, we highlighted how Information Technology aligns to support Sustainable Development Goals 1, 2, 3, 7, 9, 11,13 and 17. Efforts would now be made to discuss SDGs 5 and 14.

SDGs Targets

Leveraging ICTs Towards Achieving SDG 14

Of the 17 Sustainable Development Goals (SDGs) developed by the United Nations' General Assembly, SDG 14 - Life Below Water, aims to sustainably manage and protect marine and coastal ecosystems from pollution as well as address the impacts of ocean acidification. The world's oceans, their temperature, chemistry, currents and life, drive global systems that make the earth habitable for humankind.

Water is vital to existence, as water is life. The portion of the earth covered by water is approximately seventy 70 per cent, which denotes a larger portion of the earth's surface. This appreciable value comprises various water bodies such as streams, lakes, rivers, oceans and seas. The availability of these water bodies serves as great benefits not only to man but other living and non-living creatures. The beneficial roles played by these bodies cannot be over-emphasised as they provide job, food, income, foreign exchange and help in regulating the ecosystem.

The importance of preserving available water bodies is enormous as statistical facts reveal that approximately three billion people depend on water bodies for their livelihoods, 30 per cent of the exhaled air (carbon dioxide), produced by humans, are absorbed by water bodies thus, reducing the impact of global warming, the world's largest source of protein is derived from water bodies in form of aquatic plants and animals for feeding a population of approximately eight billion people and a globally-estimated value of three trillion dollars per year is contributed by the marine and water bodies-related industries to the world's market value. These available facts and more have made it much expedient to ensure the timely preservation of water-bodies through conscious efforts geared and channelled towards conserving them.

ICTs can be leveraged towards achieving SDG 14 by enhancing the development and adoption of gadgets to take timely readings of ocean data (water level, acidic and alkaline concentration) and transmit into a centrally-located server (database), where information regarding major world's water bodies can be determined. Through these, oceanographers, marine engineers, and researchers can use available data to address the impact of ocean acidification. ICT devices and applications can be implemented to grant access to miners and related organisations or industries to curb illegal and destructive fishing practises. AI techniques can be deployed to accurately predict the number or quantity of aquatic organisms in different water bodies at a particular time thus, influencing actions towards preserving appreciable number of stocks to maintain sustainable yield.

Case-Based Reasoning (CBR), an intelligent technique can be deployed in ICT gadgets to enforce and implement International Sea laws without prejudice. Sustaining improved economic benefits are derivable by the usage of ICTs and related technologies (mobile and web applications) by water-bodies and related industries to link respective buyers and sellers at both national and international levels for effective business transactions. ICT applications can also be used for accurate calculations and remittance of taxes to appropriate national bodies to aid global development. Furthermore, advance modelling and monitoring techniques are being deployed through satellite data and imagery in eco-based systems to simulate the impact of pollution (waste/noise) on water bodies to avert the negative effects on aquatic organisms and eutrophication. Innovative models, technologies and applications adopted by the Danish Hydraulic Institute (DHI) Group in Denmark in collaboration with eminent stakeholders and government in achieving SDG 14 includes: MIKE Coast and Sea Product Suite, DHI Current Sea API, Plume Coast, MIKE Eco Lab and ABM Lab, LITPACK and VESSEL-Check, MIKE 21/3 Hydrodynamics, MIKE 21/3 OIL SPILL, MIKE 21/3 SAND and MUD Transport. Finally, to ensure the speedy realisation of SDG 14, individuals, organisations, research institutes, international bodies, and government must adopt and implement techno-efficient ICT-based principles.

Femi Johnson
Postgraduate Student, Department of Computer Science, FUNAAB

How ICTs Can Drive SDG 5

SDG 5, the fifth goal of the 17 Sustainable Development Goals (SDGs), seeks to undertake reforms to give women equal rights to economic resources as well as access ownership and control over land and other forms of property, financial services, inheritance and natural resources. Gender equality is not only a fundamental human right but a necessary foundation for a peaceful, prosperous and sustainable world. Gender equality, as proposed by the United Nations Agenda for Sustainable Development, can be achieved through Information and Communications Technologies (ICTs).

Harnessing technology to advance gender equality and women's empowerment is vital for women and girls at all levels. When women and girls are able to change their opportunities and perspectives through ICTs, their empowerment affects a wide

1. Opportunities: ICTs provide opportunities to boost the growth of small businesses by establishing an environment for all businesses, regardless of size, location or sector to compete on an equal footing in global markets.
2. Capacity: ICTs can influence the access of women and girls to basic needs such as healthcare and good education.
3. Development: ICTs can improve the quality of information gathered and shared for developmental purposes while programmes implemented through ICTs can help realise skills acquisition through appropriate training.

Jesufunmibi Bolarinwa
Postgraduate Student, Department of Computer Science, FUNAAB

RECENT EVENT: AITP Holds International Conference

Academia in Information Technology Professional (AITP), an interest group of the Nigeria Computer Society (NCS), recently held the 2020 International Conference. The three-day conference themed, "Fostering IT Ecosystem for Effective Realisation of the 4th Industrial Revolution", was a virtual conference due to the ongoing Coronavirus disease (COVID-19). Special guests at occasion included the Speaker, House of Representatives, Hon. Femi Gbajabiamila; Minister of Communications and Digital Economy, Dr. Isa Pantami; and Executive Vice Chairman, Nigerian Communications Commission (NCC), Prof. Umar Danbatta.

Others include the Director-General, National Information Technology Development Agency (NITDA), Mr. Kashifu Abdullahi; President/Chairman-in-Council, Computer Professionals' Registration Council of Nigeria (CPN), Prof. Charles Uwadia; and President, Nigeria Computer Society (NCS), Prof. Adesina Sodiya. The Department of Computer Science, Federal University of Agriculture, Abeokuta (FUNAAB) was well represented at the conference by Dr. Rebecca Vincent, member of the 2020 AITP Conference Planning Committee/National Chairman, Finance Committee of AITP and Head of Department, Prof. Olusegun Folorunso; who chaired a section of the parallel sessions of the conference.

Scholars from universities, polytechnics and colleges of educations teaching Computer Science and Information Technology-related courses were also in attendance. Several papers were presented on emerging topics on the 4th Industrial Revolution. The various discussions established that the 4th Industrial Revolution of Artificial Intelligence, Robotics and the Internet of Things are disruptive tools; as such many African countries may find the transition difficult due to inadequate knowledge and skillsets, justifying the need for sufficient capacity building on the 4th Industrial Revolution. The President of CPN equally enjoined members of AITP to always retrain themselves through capacity building and then pass on the knowledge to students in their respective institutions.

EDITORIAL TEAM

Editors
Oreoluwa Tinubu
Oluwatimilehin Salako

Editor-In-Chief
Prof. Olusegun Folorunso

For further correspondence cscnewletter@gmail.com