MAKERERE UNIVERSITY

COLLEGE OF COMPUTING AND INFORMATION SCIENCES

CoCIS

NEWSLETTER

January - March 2026

Over 500 Graduate including business founders for the MIIC Graduate Innovation Program Cohort 1

INSIDE THIS ISSUE

Word from the Principal

Prof. Tonny Oyana
Principal, College Of Computing And Information Sciences (CoCIS)

Welcome to the College of Computing and Information Sciences (CoCIS) Quarterly Newsletter, Issue 1 (January–March 2026). This edition highlights the college's continued and dedicated commitment to excellence in teaching, research and innovation that is responsive to a dynamic national and global world. In line with this, the College successfully graduated a crop of young talent during its 76th graduation ceremony with a total of 570 students, including several innovators and business founders from the MIIC Graduate Innovation Program, whose technology-driven startups are already contributing solutions in health, agriculture, education, and tourism. The college also recorded important milestones in research and scholarship, including the launch of From Records to Publication: A Guide to Academic Authorship edited by Prof. Elisam Magara, and the development of a digital Ugandan Sign Language Dictionary aimed at enhancing communication and inclusion for the Deaf and Hard of Hearing community.

This issue also showcases impactful research initiatives, particularly the work of the Makerere AI Health Lab, which is leveraging artificial intelligence to improve disease screening and diagnostics for conditions such as malaria, tuberculosis, and cervical cancer. Through innovations such as AI-powered diagnostic tools, data collection applications, and microscopy teaching aids, the college continues to strengthen the role of technology in addressing healthcare challenges in resource-limited settings.

In addition, we highlight opportunities for engagement within the broader data science community, including the upcoming Data Science Africa 2026 Summer School and Workshop to be hosted at Makerere University. As you read this newsletter, we invite you to reflect on the dynamic contributions of our students, staff, and partners who continue to position CoCIS as a hub for innovation, research excellence and digital transformation in Uganda and beyond.

Highlights CoCIS

Some of the graduands

1. The College graduated 514 students 187 females and 327 males including 13 PhDs, 106 master's degrees, 392 bachelor's degrees, and three diplomas, during the first day of the four-day ceremony running from February 24–27. Among the graduands seven candidates were business founders for the MIIC Graduate Innovation Program Cohort 1. The students have come up with technologies and started businesses making impact on people's livelihoods in different sectors.

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2. A scholarly guide titled, "From records to publication; A guide to academic Authorship" edited by Prof. Elisam Magara, was launched. The guide is designed to support scholars from the moment they conceive a research idea to the point their work is published and read.

3. Makerere AI Health Lab under the stewardship of Dr. Rose Nakasi is laveraging Artificial Intelligence for Disease Screening The Ocular project has made significant progress in developing innovative tools for disease diagnostics, focusing on malaria, tuberculosis, and cervical cancer. These products combine advanced technology

with practical healthcare solutions to enhance diagnostic accuracy and efficiency in resource-limited settings. The project has collected datasets and trained lab technicians in various health centers to build their capacity.

4. Mr. Marvin Ggaliwango, a Machine Learning and Intelligent Systems Engineer and Assistant Lecturer at the Department of Computer Science has developed a digital Ugandan Sign Language (USL) Dictionary as a foundational tool for co-creating sign language products and translation services aimed at improving communication for the Deaf and Hard of Hearing (DHH) community.

Up coming event

Data Science Africa 2026 will take place at Makerere University in Kampala, Uganda from July 20–24, 2026, inviting students, researchers, and professionals to apply for the summer school and submit research to the workshop under the theme "Foundational and Practical Data Science in the Age of Generative AI," with more details available here: DSA 2026 Event Page.

College Fact File

Staffing: 87

1	Academic staff	30
2	Non-Teaching staff totaling	122

Student Numbers: 2572

Courses Offered		7
1	Undergraduate	7
2	Masters	4
3	PhD Programmes	5
	TOTAL	**108**

New Courses :

- BSc Data Communication and Software Engineering
- Master of e-Governance Technologies and Services

Over 500 Graduate including business founders for the MIIC Graduate Innovation Program Cohort 1

Some of the PhD Graduands during the 76th Graduation ceremony in Freedom Sqaure

CoCIS graduated **514 students** - **187 females** and **327 males** - including **13 PhDs**, **106 master's degrees**, **392 bachelor's degrees**, and **3 diplomas**, during the first day of the four-day ceremony from February 24–27.

Among the undergraduate candidates, seven were business founders for the MIIC Graduate Innovation Program Cohort 1. The students have come up with technologies and start-up businesses making impact on people's livelihoods in different sectors.

Meet Business Startup Founders for the MIIC Graduate Innovation Program (Cohort 1) who Graduated at 76th Graduation ceremony

Nantambi Elizabeth

Start-up: AgeWithYou (AWU)

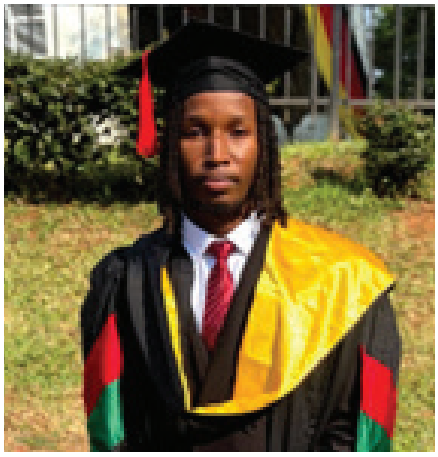
E**lizabeth Nantambi** graduated with a Bachelor's degre**e** in Software Engineering. She is co- founder of **Age With You**; a cutting-edge wearable system powered by AI that provides 24/7 monitoring for the elderly, giving caregivers reliable real-time information and enabling rapid response in emergencies.

Zirimabagabo Anslem

Jovin Kyomugaso

Start-up, Foot and mouth disease detection

Zirimabagabo Anslem and Jovin Kyomugaso, are founder and co-founders of foot and mouth detection who graduated with a Bachelor's degree in Computer Science. The team is developing a **machine learning–powered solution** for the early detection of **Foot and Mouth Disease (FMD)** in cattle. Through a simple mobile application, farmers can capture and upload images of their cows and receive instant predictions indicating possible infection. By enabling early detection, their innovation aims to reduce disease spread and protect farmers from significant financial losses.



Ariyo Ahumuza

Start-up: Baby steps

Ariyo Ahumuza, graduated with a Bachelor's degree in Software engineering and is Founder of **Baby Steps**. **Baby Steps** is an interactive early cultural learning game that is redefining how Ugandan children connect with their heritage turning culture into play, curiosity into discovery, and learning into a joyful adventure.

Ssekitto Isaac

Start - up (MobiVet)

Ssekito Isaac, graduated with a Bachelor's degree in Computer Science and is founder of **Mobivet.** Mobivet is a Cattle Disease Detector, an AI-powered, accessible, and cost-effective solution transforming livestock health management. By leveraging deep learning and computer vision, Mobivet analyzes images of cattle to detect diseases such as foot-and-mouth disease with high accuracy. With just a smartphone, farmers can capture images and receive instant diagnostic feedback with explainable insights, enabling timely intervention and treatment.

Kalema Rogers

Start -up: SmartScan Maternal Assistant

K**alema Rogers**, founder of **SmartScan Maternal Assistant** graduated with a Bachelor's degree in Computer Science. SmartScan Maternal Assistant is an innovative mobile application addressing the critical challenge of inadequate

obstetric care in low-resource settings. Built to bridge the gap caused by the shortage of trained sonographers and limited access to advanced equipment, SmartScan empowers non-specialist health workers with AI-powered, real-time guidance. By enabling early detection and informed decision-making, the solution aims to reduce maternal and fetal mortality and morbidity, saving lives and strengthening healthcare delivery where it is needed most.

Ssemaganda George

Start -up Dirt-Trails Safaris

Ssemaganda George, founder of **Dirt-Trails Safaris** graduated with a Bachelor's degree in Computer Science. Dirt Trails Safaris is redefining travel through affordable, sustainable, and authentic eco-adventure experiences. Through backpacking, camping, cycling expeditions and community-based eco-tourism, Dirt Trails Safaris invites travelers to explore Uganda beyond traditional routes while actively promoting environmental conservation and supporting local livelihoods.

CoCIS in the News

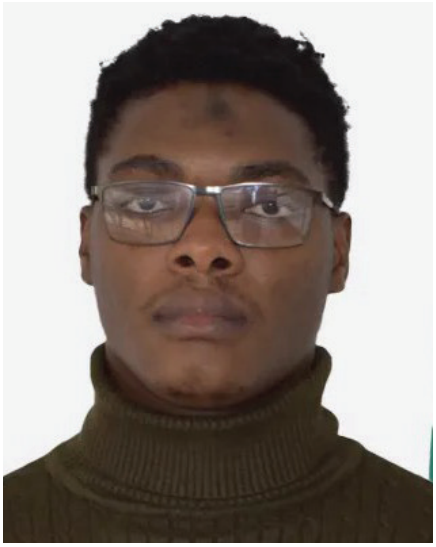
How Uganda will benefit from AI summit in India: Friday, February 13, 2026. https://www.monitor.co.ug/uganda/oped/commentary/how-uganda-will-benefit-from-ai-summit-in-india-5358776

Prof. Elisam Magara, a lecturer at the East African School of Library and Information Sciences released a 267-page book aimed at guiding students, lecturers, researchers and postgraduate scholars on productive academic writing. https://www.newvision.co.ug/category/education/makereres-prof-magara-unveils-solutions-to-ac-NV_228070_022026 https://buff.ly/sca6H3m #VisionUpdates https://x.com/newvisionwire/status/2022713764529717258

Africa produces just 3% of global research. Makerere wants to change that https://observer.ug/education/africa-produces-just-3-of-global-research-makerere-wants-to-change-that/

Makerere Research and Innovation Impact 1:

A digital Ugandan Sign Language Dictionary developed



Mr. Marvin Ggaliwango

Marvin Ggaliwango, a Machine Learning and Intelligent Systems Engineer at the Department of Computer Science has developed a digital Ugandan Sign Language (USL) Dictionary as a foundational tool for co-creating sign language products and translation services aimed at improving communication for the Deaf and Hard of Hearing (DHH) community. His work integrates Artificial Intelligence with inclusive design principles, strongly emphasizing co-creation by actively involving persons with disabilities in the design and development of technologies intended for their use.

His work integrates Artificial Intelligence with inclusive design principles, strongly emphasizing co-creation

The digital dictionary underpins advanced sign language processing initiatives such as SignNet II, which supports bidirectional sign-to-text and text-to-sign translation using keypoint-based pose features to achieve high accuracy. Additionally, his research contributes to the development of accessible, real-time mobile translation applications for everyday use of USL. Beyond technical innovation, Ggaliwango provides institutional leadership as Chairperson for Staff with Disabilities at Makerere University and as a Commonwealth Scholar at the University of Leeds, where he researches the intersection of artificial intelligence and inclusive policy, positioning the digital dictionary as a critical resource for future technological innovation in sign language accessibility.

Makerere Research and Innovation Impact 2:

Leveraging Artificial intelligence for disease screening

Makerere AI Health Lab Leveraging Artificial Intelligence for Disease Screening. The Ocular project has made significant progress in developing innovative tools for disease diagnostics, focusing on malaria, tuberculosis, and cervical cancer. These products combine advanced technology with practical healthcare solutions to enhance diagnostic accuracy and efficiency in resource-limited settings.

Adapter Design and Fabrication

The project successfully designed and fabricated 3D-printed adapters that can be mounted on microscopes used in diagnosing malaria, tuberculosis, and cervical cancer. These adapters were field-tested in health centers and refined based on feedback to ensure optimal performance.

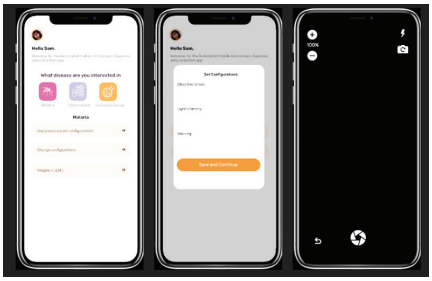
Adapter fixed on microphone holding the smart phone

Adapter designs fabricated in Mak AI-Health Lab

Data Collection App (Malaria and Cervical Cancer

Malaria Diagnosis App

This app facilitates the systematic collection of microscopy data related to malaria and cervical cancer. It captures images along with important metadata, such as blood slide details and microscope settings. The data is uploaded to a central server, contributing to the creation of a robust dataset that can be used for training AI models and refining diagnostic tools.



Data collection application for malaria, TB and Cervical Cancer.

An Android app was created using AI-driven object detection technology to improve malaria diagnosis. The app allows users to capture or upload microscopy images, which the AI system processes to detect and highlight white blood cells and malaria trophozoites using bounding boxes. This tool improves diagnostic accuracy, making it especially useful for healthcare professionals working in resource-limited environments.

Real-Time Surveillance and Ecosystem Intelligence

Beyond diagnosis, AI is being used to address delayed malaria surveillance data. In many rural areas, manual reporting creates lags that hinder outbreak response. The Ocular system integrates real-time data into Uganda's Health Management Information Systems (HMIS). By incorporating environmental factors like mosquito breeding patterns, rainfall, humidity, and ITN coverage, AI models can forecast outbreaks more accurately and guide geographically targeted interventions. Collaboration with environmental health experts and net distribution teams ensures contextualized, actionable insights for the Ministry of Health.

Multilingual Chatbots and Community Engagement

Recognizing the importance of public understanding, Makerere AI Health Lab is developing AI-powered chatbots and medical translation tools in local languages. These platforms educate communities on malaria prevention, symptoms, treatment, and the role of AI in healthcare. By being culturally aware and community-facing, the tools foster trust, awareness, and empower individuals to seek timely care.

Microscopy Teaching Aid

A desktop and mobile app designed to enhance microscopy education was also developed. Students and professionals can capture images, which are then uploaded with metadata for annotation and instructional feedback. This interactive platform improves diagnostic skills by providing hands-on learning experiences, making it a valuable educational tool for both students and professionals. The project work aims to integrate these AI-enhanced tools into the existing health care infrastructure, making disease surveillance and diagnosis more accessible and reliable in Uganda and potentially other similar contexts.

Pictorial of Events

The Mak -CoCIS 76th Graduation

A section of Masters and PhD candidates during the 76th Graduation ceremony on 24th February in the Freedom Square.

A section of undergraduate students during the 76th Graduation ceremony on 24th February in the Freedom Square

Scholarly Guide launched

Prof. Elisam Magara, Prof. Barnabas Nawangwe , Prof. Tonny Oyana and Dr. Sarah Kaddu during the book launch in Senate building on 12th February 2026

Automating Microscopy

Recently, 10 dedicated participants, 7 laboratory technologists and 3 members of the Makerere AI Health Lab came together at Kebera Diagnostic Laboratories (KDxL) for an internal validation exercise. 74 Ziehl-Neelsen stained smears were examined and 750 microscopy images captured. The collected data will be used to train the AI model, followed by data cleaning and sensitivity & specificity analysis, before a full validation report is generated. The goal, an AI that can distinguish positive from negative TB smears with greater precision reliably, in real clinical settings.

EDITORIAL TEAM
1. Prof. Tonny Oyana, Principal
4. Ms. Jane Anyango, Principal Communication Officer
5. Ms. Eunice Rukundo, Deputy Chief-PRO
6. Mr. Agaba Issa Mugabo, Brand/Marketing Officer

College of Computing and Information Sciences
P.O. Box 7062, Kampala-Uganda,
Tel: +256 414 540628/534560/1-97,
Fax: +256 414 540620,
Email: principal.cis@mak.ac.ug / pr.cocis@mak.ac.ug
Website: www.cocis.mak.ac.ug
X : @MakerereCoCIS
https://www.instagram.com/MakCoCIS
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