CALESTOUS JUMA SEMINAR SERIES ON KNOWLEDGE AND INNOVATION FOR AFRICA'S DEVELOPMENT

THEME: *Accelerating the Realization of Sustainable Development Goals (SDGs) through Artificial Intelligence Solutions*

14th - 16th June 2022

Register!

DAY 1: 14 June 2022 – Artificial Intelligence for Sustainable Development in Africa 14:00 - 18:00 EAT Moderator – Prof. John Mugabe			
Time	**Activity**	**Institution**	**Responsible Person**
Before program	CJ Video		
14:00 - 14:10	Welcome Remarks	Dean, College of Scholars (ACTS)	Prof Shem Wandiga IDRC – Ms Katie Clancy
14:10 - 14:20	A brief overview about CJ Seminar series	Executive Director, African Centre for Technology Studies (ACTS)	Prof Tom Ogada
14:20 - 14:30	CJ Vision for Africa	Executive Director, Calestous Juma Legacy Foundation (CJLF)	Ms Angela Christiana
14:30 - 15:00	Keynote speech: **AI and Africa's Development**	-Coordinator of African Network for Solar Energy (ANSOLE) (www.ansole.org)	Prof. Daniel Ayuk Mbi Egbe
15:00 - 15:10	Role of EASTECO in Promoting Emerging Technologies in the East Africa region	Deputy Executive Secretary – East African Science, Technology and Innovation Commission, which is based in Kigali	Mr Fortunate Muyambi
15:10 - 15:20	Economics of AI for Africa's Transformation	Director of Research - The Centre for the Study of the Economies of Africa (CSEA) based in Nigeria	Dr Adedeji Adeniran
15:20 - 15:50	Panel Discussion & Q/A		Prof John Mugabe
Session I: How AI can Accelerate Realization of SGDs in Africa Moderator: Dr. Joanes Atela			
15:50 - 16:00	AI research at UCAD: Application to Health and Marine Biodiversity	Université Cheikh Anta Diop de Dakar (UCAD)	Prof Mamadou Camara
16:00 - 16:10	AI opportunities in Agriculture & Environmental Protection in Africa	University of Abomey-Calavi	Prof Romain Glele-Kakai
16:10 - 16:20	AI in the medical field: challenges and opportunities in developing countries	Université Cheikh Anta Diop de Dakar (UCAD)	Prof Idy Diop
16:20 - 16:30	Context-aware AI for social good	Sunbird AI	Dr Ernest Mwebaze

16:30 - 16:40	Q/A	ACTS	Ms Mercy Ayub /Mr Sam Wanjau/ Mr Sam Mibey
16:40 - 16:50	**Health Break**		

<table>
<tr><td colspan="4" style="background:green;color:white">Session II: Responsible and Ethical Application of AI
Moderator: Dr. Ann Kingiri</td></tr>
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16:50 - 17:00	AI in Africa: Where do the risks begin?	Research ICT Africa	Mr Mark Gaffley
17:00 - 17:10		Institute for Humanities in Africa (HUMA)	Dr Divine Fuh
17:10 - 17:20	Artificial Intelligence and the Law	University of California (UCLA)/University of Surrey	Prof Ryan Abbot
17:20 - 17:30	Q/A		Ms Mercy Ayub /Mr Sam Wanjau/ Mr Sam Mibey
17:30 - 17:40	Closing Remarks	African Centre for Technology Studies (ACTS)/Calestous Juma Legacy Foundation (CJLF)	Prof Tom Ogada/ Angela Christiana

**Day 2: 15 June 2022: Presentation of AI4D Africa Scholarship Projects
14:00 – 18:00 EAT**

The Artificial Intelligence for Development in Africa (AI4D Africa) Scholarship is a comprehensive 2 year program partnership between AI4D Africa and African Centre for Technology Studies (ACTS). It is funded by the IDRC/SIDA (International Development Research Center / Swedish International Development Cooperation Agency) to support both; the training of PhD students in Artificial Intelligence and the research work of Early Career Academics or Scholars (Early Career and Post-Doc) in AI. The aim of the scholarship program is to; Address the development agenda of Africa, Focus on responsible AI research and deployment, Consider ethics and gender in the research and Co-create through consultation with the policy makers and potential users of the outputs of the results.

Time	Activity	Institution	Responsible Person
Before program	CJ Video		
14:00 - 14:10	Welcome Remarks	African Centre for Technology Studies (ACTS)	Prof Tom Ogada

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<tr><td colspan="4" style="background:green;color:white">Session 1: Research Work - AI4D Africa Scholars</td></tr>
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14:10 - 14:20	Overview AI4D Africa Program	Swedish International Development Cooperation Agency (SIDA)	Dr Vilhem Muller (TBC)
14:20 - 14:30	Scholarship Program Progress	African Centre for Technology Studies (ACTS)	Dr Winston Ojenge

<table>
<tr><td colspan="4" style="background:green;color:white">Session II: Application of AI and ML in Africa's Key Economic Sectors</td></tr>
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14:35 - 15:15	Early warning system for the management of the spread of African Migratory locust (AML) invasion in Zambia.	University of Zambia	Mr Brian Halubanza
	Deep Learning model with application on stress detection on tomato	University of Abomey-Calavi (UAC)	Ms Sèton Calmette Ariane Houetohossou
	Optimization of machine learning techniques for agricultural yield prediction.	University of Abomey-Calavi (UAC)	Ms Souand Peace Gloria Tahi
	Crop conditions monitoring and yield prediction using IoT systems and Machine Learning Techniques for Precision Agriculture (Case study of maize in Rwanda)	University of Rwanda	Dr Frederick Nzanywayingoma
15:15 - 15:25	Q/A		Ms Mercy Ayub /Mr Sam Wanjau/ Mr Sam Mibey

15:25 – 16:15	Modelling spectrum sensing using Deep Learning and Machine Learning for wireless networks in South Africa	University of Fort Hare South Africa	Mr NyashadzasheTamuka
	Study of IoT security for e-health in developing countries	Université Cheikh Anta Diop de Dakar	Mr Dione Doudou
	Developing Methods To Monitor and Analyze Eutrophication Of Lake Tana From Remote Sensing Imagery Using Machine Learning– Upper Blue Nile, Ethiopia	Bahir Dar University	Mr Elias Leggesse
	Examining East Africa's Precipitation and Temperature Response to Nitrogen Dioxide, Sulphur Dioxide and Carbon Monoxide	Makerere University	Mr Opio Ronald
	Secure And Efficient Anonymous Certificateless Signcryption For Key Distribution Scheme For Smart Grid	University of Rwanda	Ms Jennifer Batamuliza
16:15 - 16:25	Q/A		Ms Mercy Ayub /Mr Sam Wanjau/ Mr Sam Mibey
16:25 - 16:35	Health Break		
	Speech Improvement Framework using Long Short-Term Memory Neural Network and Dynamic Time Warping to improve Kenyatta National Hospital health records Retrieval	Jomo Kenyatta University Of Agriculture And Technology (JKUAT)	Ms Mercy Kimani
	Agent Based Modeling and Simulation to address the challenges of early detection and surveillance of mosquito borne diseases such as Dengue in Sub-Saharan Africa.	The Nelson Mandela African Institution of Science and Technology (NM-AIST)	Ms Luba Pascoe
	Develop a verbal autopsy-based hybrid data analytic model for improved determination of the cause of death to produce accurate mortality statistics.	University of Dar es Salaam	Ms Mahadia Tunga
	Explore the potential impact of using ensemble Convolutional Neural Network architectures for detecting retinal diseases	University of KwaZulu Natal	Mr Stewart Muchuchuti

Time	Activity	Institution	Responsible Person
	in a multiclass, multilabel problem.		
	Prediction model and decision support system for COPD (Chronic Obstructive Pulmonary Disease) patients based on wearable pulse oximeter	University of Rwanda-College of Science	Ms Claudia Abineza
	Application of AI/ML approaches in targeting aid beneficiaries.	Addis Ababa University	Dr Mesfin Fikre
	Machine Translation (MT) and Automatic Speech Recognition (ASR) for Dioula	Polytechnic National Institute Houphouët-Boigny	Dr Ismael Kone
17:45 - 17:55	Q/A		Ms Mercy Ayub /Mr Sam Wanjau/ Mr Sam Mibey
17:55 - 18:00	Closing Remarks	ACTS/IDRC/SIDA	Ms. Katie Clancy/ Dr.Vilhelm Muller

DAY 3: 16 June 2022 – Women in Artificial Intelligence
14:00 – 18:00 EAT

Time	Activity	Institution	Responsible Person
Before program	CJ Video		
14:00 - 14:15	Responsible AI for Agriculture : Using AI for Preserving Crops	The Smart Granary	Ms Ndeye Fatou Mboup
14:15 - 14:30	AI for the dairy industry	Nelson Mandela African Institution of Science and Technology (NM-AIST)	Dr Devotha Nyambo
14:30 - 14:45	Deep Learning Techniques for Early Detection of Crop Diseases	Nelson Mandela African Institution of Science and Technology (NM-AIST)	Dr Neema Mduma
14:45 - 15:00	Integrated AI, IoT and Mobile App for Mycotoxin Prediction	Nelson Mandela African Institution of Science and Technology (NM-AIST)	Dr Judith Leo
15:00 - 15:20	Discussion		All
15:20 – 15:35	AI in Education and the Transition to Sustainability	Global Entrepreneurship Centre (GEC)	Dr Veerle Vandeweerd
15:35 - 15:50	Robotics and AI in Africa: creating value by addressing the "Who" and "How"	WeRobotics and Flying Labs	Dr Sonja Betschart
15:50 - 16:05	AI and localization of mobile phone users	Université Cheikh Anta Diop de Dakar (UCAD)	Ms Mariame Niang
16:05 - 16:20	Geospatial technology and AI for smallholder farmer risk scoring	Univerity of Nairobi	Ms Susan Okeyo
16:20 - 17:35	Discussion		All
17:35 - 17:50	Q/A		Ms Mercy Ayub /Mr Sam Wanjau/ Mr Sam Mibey
17:50 - 18:00	Closing Remarks	ACTS/CJLF	Prof Tom Ogada Angela Christiana Dr Joanes Atela