IST-Africa 2025
Final Programme
Nairobi, Kenya

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28 - 30 May 2025

Hosted by

REPUBLIC OF KENYA | NRF KENYA
NATIONAL RESEARCH FUND

ISTAfrica

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Introduction

IST-Africa 2025 Conference takes place as a physical in-person event from 28 -30 May 2025 in Nairobi, Kenya. **IST-Africa 2025** is the twentieth in an Annual Conference Series bringing together senior representatives from leading public, private, education & research organisations, to discuss ICT policy, showcase research results and share knowledge.

Hosted by the Government of Kenya through the National Research Fund and Technically Co-Sponsored by IEEE, **IST-Africa 2025** focuses on the the Role of ICT, Research and Innovation in Africa's Development and specifically on Applied ICT research n areas including eHealth, eGovernment, Technology Enhanced Learning and Digital Skills, Cyber Security, Next Generation Computing, eAgriculture, Environmental Sustainability and Green Economy, Societal Implications of Technology, International Cooperation and Global Development. **IST-Africa 2025** will provide a collegiate setting for presentations and discussions of national and regional developments, issues of concern & good practice models, and networking with peers. **IST-Africa 2025** will also provide an opportunity to identify potential partners for future proposals under Horizon Europe.

IST-Africa directly supports Information Society, Innovation and ICT aspects of the Africa-EU Strategic Partnership and the Science, Technology and Innovation Strategy for Africa (STISA-2024)

The goals of the **IST-Africa** Conference Series are Community Building to facilitate EU-African research cooperation and successful exploitation of research results, to stimulate take-up of Research and Innovation results, to promote knowledge sharing between commercial, government and research organisations, to exchange experiences about the current state of eAdoption at a sectoral, national or regional level, and to support International Cooperation and open up the European Research Area (ERA) to Africa.

Who will you meet?

IST-Africa 2025 Conference attracts policy makers, practitioners, and researchers from leading commercial, government and research organisations around the world. Unlike many research conferences, **IST-Africa** provides an opportunity to meet with senior managers, practitioners, project managers, software engineers and researchers from industry, government and research organisations. Delegates and speakers attend to share knowledge, experience and lessons learnt, and network with their peers from around the world.

IST-Africa 2025 Conference also provides the unique opportunity to identify partners and opportunities to co-operate in international ICT research projects co-funded by the European Commission under Horizon Europe.

The Venue

IST-Africa 2025 Conference takes place in in Edge Convention Centre Red Cross Road, South C, Nairobi, Kenya. The Convention Centre is 10 mins from JKIA.

The Programme

The 3-day programme features an invigorating mix of business and government case studies, technical and policy papers. As well as opening and closing plenary sessions, delegates may participate in 28 thematically focused parallel sessions featuring different aspects of eHealth, eGovernment, Next Generation Computing (including Artificial Intelligence, Blockchain, Internet-of-things), CyberSecurity, Technology Enhanced Learning and Digital Skills, ICT4D, eAgriculture and Environmental Sustainability, Content Technologies and Societal Implications of Technology. Session Chairs will ensure active discussion and facilitate

delegate participation.

In the context of focusing on the Role of ICT, Research and Innovation in Africa's Development, the Opening Plenary on Wednesday 28 May features a High-Level Roundtable on the Role of ICT Adoption, Research and Innovation to Strengthen Digital Innovation Ecosystems in East Africa.

The programme is subject to change and the **IST-Africa 2025** Organising Committee reserves the right to alter the contents, venue and/or speakers. This Programme is accurate as at 27 May 2025.

Conference Proceedings

The **IST-Africa 2025** conference proceedings will published on an open access basis in the Paper Repository on the Conference Portal. It is necessary for all papers to be presented during the event with live questions taken by an author/co-authors. Paper authors will also have the option after the event for their paper to be included in the **IST-Africa 2025** Conference Proceedings submitted for publication in IEEE Xplore. Each presenter will present once in the programme.

Plenary Session Speakers

Prof. Shaukat Abdulrazak
PS, *State Department for Science, Research and Innovation, Kenya*

Prof Ratemo Michieka
Chairman, National Research Fund, Kenya

Prof Dickson Andala,
CEO, National Research Fund Kenya

Dr. David Ngigi
Acting DG, National Commission for Science, Technology and Innovation, Kenya

Prof. Meoli Kashorda
Executive Director, Kenya Education Network

Prof. Elijah Omwenga
VC, The Open University of Kenya

Prof. Peter Muchiri
VC, Dedan Kimathi University of Agriculture and Technology, Kenya

Prof. Isaiah Wakindiki
VC, KCA University Kenya

Dr. Shikoh Gitau
Founder/CEO, Qhala Kenya

Ms. Tonya Nyakeya
Special Projects & Strategic Initiatives Advisor, Results for Africa Institute, Kenya

Plenary Speakers as at 27 May 2025 include:

- **Prof. Shaukat Abdulrazak**, Principal Secretary, State Department for Science, Research and Innovation, Kenya
- **Prof. Dickson Andala**, CEO, National Research Fund, Kenya
- **Prof. Ratemo W. Michieka**, Chairman, National Research Fund, Kenya
- **Dr. David Ngigi**, Ag. Director General, National Commission for Science, Technology and Innovation, Kenya
- **Prof. Meoli Kashorda**, Executive Director, Kenya Education Network
- **Prof. Elijah Omwenga**, Vice Chancellor, The Open University of Kenya, Kenya
- **Prof. Peter Muchiri**, Vice Chancellor, Dedan Kimathi University of Agriculture and Technology, Kenya
- **Prof. Isaiah Wakindiki**, Vice Chancellor, KCA University, Kenya
- **Dr. Shikoh Gitau**, Founder/CEO, Qhala, Kenya
- **Ms. Tonya Nyakeya**, Special Projects & Strategic Initiatives Advisor, Results for Africa Institute, Kenya

International Programme Committee

A distinguished Programme Committee has been formed to review and provide feedback on papers and presentations, and chair sessions.

The **IST-Africa 2025** International Programme Committee includes

- **Paul Cunningham** (Conference Chair), IST-Africa Institute, Ireland
- **Miriam Cunningham (**Technical Programme Chair), IST-Africa Institute, Ireland
- **Prof. Azizuddin Ahmed Biyabani,** Carnegie Mellon University Africa, Rwanda
- **Dr Jackson Cheruiyot,** Masinde Muliro University of Science and Technology, Kenya
- **Laurens Cloete,** University of Pretoria, South Africa
- **Rubeena Doomun,** Open University of Mauritius, Mauritius
- **Prof. Kenneth Foster,** North Carolina State University, USA
- **Prof. David Gichoya,** Moi University, Kenya
- **Dr Nobert Jere,** University of Fort Hare, South Africa
- **Dr. Chipo Kanjo,** University of Malawi, Malawi
- **Dr John Kinyuru,** JKUAT, Kenya
- **Kristiina Lahde,** Saliens Ltd, Finland
- **Ilari Lindy,** HAUS - The Finnish Institute of Public Management, Finland
- **Dr. Patricia Makwambeni,** University of Cape Town, South Africa
- **Prof. Maurice Mars,** University of KwaZulu-Natal, South Africa
- **Dr. Chibuike Mbanefo,** Stellenbosch University, South Africa
- **Dr. Nita Mennega,** University of Pretoria, South Africa
- **Morten Møller,** GRENEN, Denmark
- **Dr. Roberto Murphy,** INAOE, Mexico
- **Dr. Paula Musuva,** United States International University - Africa, Kenya
- **Prof. Joyce Mwangama,** University of Cape Town, South Africa
- **Dr Gabriel Nhinda,** Namibia University of Science and Technology, Namibia
- **Dr. Joshua Ndiege,** United States International University - Africa, Kenya
- **Dr. Lilian Ogonda,** Maseno University, Kenya
- **Dr. Ayodele Periola,** Cape Peninsula University of Technology, South Africa

- **Dr. Fani Radebe,** University of Johannesburg, South Africa
- **Dr. Tlou James Ramabu,** Tshwane University of Technology, South Africa
- **Dr. Daniel Ramotsoela,** University of Cape Town, South Africa
- **Dr. Faatiema Salie,** Stellenbosch University, South Africa
- **Minna Takala,** Regional Council of Häme, Finland
- **Prof. Theo Tsokota,** Midlands State University, Zimbabwe
- **Dr. Martin Ujakpa,** University of KwaZulu-Natal, South Africa
- **Prof. Darelle van Greunen,** Nelson Mandela University, South Africa
- **Dr. Mike Wa Nkongolo,** University of Pretoria, South Africa

Organising Committee

- **Miriam Cunningham,** IST-Africa Institute **/** IIMC, Ireland
- **Paul Cunningham,** IST-Africa Institute **/** IIMC, Ireland
- **Prof. Dickson Andala**, CEO, National Research Fund, Kenya
- **Jacob Njagih,** Deputy Director, Resource Mobilisation and Partnership, National Research Fund, Kenya

Conference Secretariat

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www.IST-Africa.org/Conference2025

1 DAY

Wednesday, May 28, 2025

08:00	Registration

09:00 Opening Plenary 1a

Chair: Dr Gatama Gichini, State Department for Science, Research, and Innovation, Kenya

Welcome Remarks
Prof. Dickson Andala, CEO, National Research Fund, Kenya

Brief Remarks
Prof. Ratemo W. Michieka, Chairman, National Research Fund, Kenya

Opening Speech
Prof. Shaukat Abdulrazak, Principal Secretary, State Department for Science, Research and Innovation, Kenya

10:00	Coffee Break & Networking

10:30 Plenary Session 2a: High-Level Roundtable - Role of ICT Adoption, Research and Innovation to Strengthen Digital Innovation Ecosystems in East Africa

Moderator: Paul Cunningham, IST-Africa Institute, Ireland

Prof. Dickson Andala, Chief Executive Director, National Research Fund, Kenya

Dr. David Ngigi, Ag. Director General, National Commission for Science, Technology and Innovation, Kenya

Prof. Meoli Kashorda, Executive Director, Kenya Education Network

Prof. Peter Muchiri, Vice Chancellor, Dedan Kimathi University of Agriculture and Technology, Kenya

Prof. Isaiah Wakindiki, Vice Chancellor, KCA University, Kenya

Dr. Shikoh Gitau, Founder/CEO, Qhala, Kenya

Ms. Tonya Nyakeya, Special Projects & Strategic Initiatives Advisor, Results for Africa Institute, Kenya

12:30	Lunch & Networking

14:00 Session 3a: eGovernment I

Chair: Joshua Ndiege, United States International University – Africa, Kenya

Digital Skills Development in Malawi: Government Strategies and Priorities
Chikondi Senzani, University of Cape Town, South Africa

"Left Behind" in Digital Transformation: A case of E-government Non-Use among Senior Citizens in Kenya
Anne Muchiri, United States International University- Africa, Kenya

Improving the Public Procurement Process in Kenya through the Public Procurement Information Portal (PPIP) Implementation
Ann Chemutai, Strathmore University, Kenya

Assessing E-Government Systems on Public Service Delivery in Ghana: A Bibliometric Analysis
Theophilus Acquah, Ghana Communication Technology University, Ghana

14:00 Session 3b: eHealth 1

Chair: Rose Magoma Nyamao, Kenyatta University, Kenya

Analysis of Digital Health Tools and Technologies Influence on Equitable Access to Universal Health Coverage in Kenya
Ruth Wambua, University of Nairobi, Kenya

Factors of Human Resource Information Systems in Health Organizations' Sustainability in South Africa
Emmanuel Udekwe, University of the Western Cape, South Africa

The Safe Space Initiative: An IoT Solution to Baby Theft in Ghanaian Hospitals
Joseph Okyere, Ashesi University, Ghana

14:00 Session 3c: Technology-Enhanced Learning 1

Chair: Harriet Kinya, National Commission for Science Technology and Innovation, Kenya

Evaluating the Learner Experience of the TCPD Learning Management System for Primary School Teachers in Tanzania
Joel Mtebe, University of Dar es Salaam, Tanzania

Unda.Xplora: A Portable Physical Computing Kit for Under-Resourced Classrooms and Homes in Africa to make STEM Education Equitable, Accessible and Inclusive
Mercy Mbagara, Phinalabs Technologies, Kenya

How We Succeeded in Teaching (Advanced) ICT in Mozambique
Luciano Baresi, Politecnico di Milano, Italy

Application of Information and Communication Technologies (ICTs) for Learning at Muhimbili University of Health and Allied Sciences
Restituta Mushi, Muhimbili University of Health and Allied Sciences, Tanzania

14:00 Session 3d: Next Generation Computing 1

Chair: Tlou Ramabu, Tshwane University of Technology, South Africa

An IoT AC and DC Energy Meter to Assess Solar-Augmented Water Heating
MJ Booysen, Stellenbosch University, South Africa

Artificial Dataset Generation and Bagging Ensemble Learning for Enhanced Fault Detection in Induction Motors
Witesyavwirwa Vianney Kambale, Alpen Adria University - Klagenfurt, Austria

Optimizing Traffic Signal Control using High-Dimensional State Representation and Efficient Deep Reinforcement Learning
Lawrence Francis, Carnegie Mellon University, Nigeria

Using a Data Observatory Approach to support 4IR-enabled Sustainable Decarbonisation in South Africa
Merryl Ford, CSIR, South Africa

15:30	Coffee Break & Networking

16:00 Session 4a: eGovernment 2

Chair: Joyce Ngure, State Department for Science, Research, and Innovation, Kenya

Enhancing Transparency and Security in Means Testing for Education Financing: A Blockchain-Based Approach
Alex Kibet, Laikipia University, Kenya

Blockchain Technology Adoption in Land Administration in Developing Countries: A Synthesis and Review
Kenneth Kithinji, United States International University-Africa, Kenya

Evaluating the Impact and Challenges of Public Disaster Alert Systems in KwaZulu-Natal
Louis Mothwa, CSIR, South Africa

Towards Reliable 3D Crime Scene Investigation in Low-resource Regions using LiDAR
Mfundo Maneli, University of the Western Cape, South Africa

16:00 Session 4b: eHealth 2

Chair: John Gogo, State Department for Science, Research, and Innovation, Kenya

On the Generativity of Digital Public Goods: DHIS2 and OpenMRS in Ethiopia
Melaeke Serawit Negussie, University of Oslo, Norway

A Systematic Review of mHealth Appropriation in the South African Public Health Sector
Elizabeth Jangwanda, University of Cape Town, South Africa

Challenges for Data-driven Health Planning in Primary Healthcare Facilities: A Data Work Perspective
Hassan Muhomi, University of Oslo, Norway

Scaling of Health Information Systems in Education: A Case of Cross-sectoral Collaboration
Eric Munyambabazi, University of Oslo, Norway

16:00 Session 4c: Technology-enhanced Learning 2

Chair: David Gichoya, Moi University, Kenya

A Policy Framework for the Use of Generative Artificial Intelligence in Higher Education Institutions
Adam A. Alli, Islamic University in Uganda, Uganda

Programme

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Integrating Generative Artificial Intelligence Generated Assessment in Higher Education: Computer Science Use Case
Benson Kituku, Dedan Kimathi University of Technology, Kenya

Integrating Generative AI to Higher Education System in Africa: Reflections from Tests in Namibia
Jussi Jauhiainen, University of Turku, Finland

Students' Perceptions on the Use of Generative AI in Enhancing Teaching and Learning Computer Science Courses
Susan Mwaniki, Kenyatta University, Kenya

Perceptions of the Use of Generative AI in Higher Education: A Survey of Tanzanian Universities
Salome Maro, University of Dar es Salaam, Tanzania

16:00   Session 4d: Next Generation Computing 2

Chair: Paul Cunningham, IST-Africa Institute, Ireland

Design and Implementation of BlockAPI - a Blockchain-as-a-Service Platform
Julian Kanjere, CSIR, South Africa

Comparative Evaluation of Machine Learning Models for Predicting Fresh Produce Cold Chain Temperature: A Case of South African Apples
Jeremiah Taguta, University of the Western Cape, South Africa

Streamlining Real-time Sensor Data Collection and Querying Processes from Environmental Parameters In a Food Cold Store
Pascal Nsunba, University of the Westen Cape, South Africa

A Hybrid Blockchain-IPFS Solution for Secure and Scalable Data Collection and Storage in Smart Water Meters
Thandile Nododile, University of the Western Cape, South Africa

Optimizing Fully-Linear Deep Learning for Pipe Burst Localization in Water Distribution Networks: A Comparative Analysis of Particle Swarm Optimization and Population-Based Training
Clement Nyirenda, University of the Western Cape, South Africa

18:00	End of Parallel Sessions

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2 DAY

Thursday, May 29, 2025

09:00 Session 5a: Cyber Security 1

Chair: Caroline Munyiri, State Department for Science, Research, and Innovation, Kenya

Exploring Organizational Resilience Towards AI-Driven Cyber Threats: A Systematic Literature Review
Mnqobi Prince Ndlovu, University of Cape Town, South Africa

Investigating the Impact of Artificial Intelligence on Cybersecurity in the Global Health Sector
Thembekile Mayayise, University of the Witwatersrand, South Africa

Transborder Data Flows and AI Innovation Challenges in the Data Localization Landscape: A Kenyan Perspective
Edwin Agata, Kabarak University, Kenya

A Systematic Review of Public Key Cryptography: Implementation, Challenges, and Future Opportunities
Daniel Gyasi-Nyarko, Ghana Communication Technology University, Ghana

09:00 Session 5b: eHealth 3

Chair: Rose Magoma Nyamao, Kenyatta University, Kenya

Fuzzy Logic Predictive Model for Early Diagnosis and Prognosis of Breast and Prostate Cancer
Aggrey Shitsukane, Technical University of Mombasa, Kenya

Automatic Detection and Classification of Gastrointestinal Pathological Findings from Endoscopic Images using a Hybrid ResNet50-CNN
Samson Kinyanjui, Dedan Kimathi Unversity of Technology, Kenya

Performance Analysis of Topic Modelling Algorithms on a South African HIV/AIDS Question Dataset
Kyle Stone, Tshwane University of Technology, South Africa

Hybrid Deep Learning Model for Spermatozoa Movement Analysis and Male Infertility Diagnosis Using U-Net, Yolov8, And DeepSort
Felix Lopuran, Dedan Kimathi University of Technology, Kenya

09:00 Session 5c: Technology-Enhanced Learning 3

Chair: Joshua Ndiege, United States International University – Africa, Kenya

Adoption of Technology-Enhanced Pedagogical Methods in Higher Education: Faculty Engagement, eSkills, and Barriers
Aron Kondoro, University of Dar-es-Salaam, Tanzania

A Framework for Diagnosing the Transformative Development Nature of a University ICT Curriculum
Leonard Peter Binamungu, University of Dar es Salaam, Tanzania

Promoting University Students' Self-Regulated Learning Skills on E-Learning Platforms Using Educational Data Mining
Ruth Wario, University of the Free State, South Africa

Guidelines for Designing an Information Architecture for a First-Year Programming Module on Moodle: Nelson Mandela University Case Study
Asanda Kafile, Nelson Mandela University, South Africa

09:00 Session 5d: Next Generation Computing 3

Chair: David Wekesa, Multimedia University of Kenya, Kenya

Using CNN-LSTM and KNN to Analyze Energy Consumption Patterns of Smarthome Devices
Edmore Chikohora, Cardfiff Metropolitan University, United Kingdom

Integrating Data Analytics and GIS for Smart City Development: A Systematic Literature Review
Jude Osakwe, Namibia University of Science and Technology, Namibia

A Game-theoretic Model of Forex Trading with Stochastic Strategies and Information Asymmetry
Patrick Naivasha, Dedan Kimathi University of Technology, Kenya

Comparative Study between in-Memory Database and Hard Drive Database: An Application to Data Analytics
Ayabuya Ntlombeni, UNISA, South Africa

10:30	Coffee Break & Networking

11:00 Session 6a: Cyber Security 2

Chair: Paula Musuva, USIU-Africa, Kenya

Balancing Innovation and Data Residency- A Case Study of a Financial Institution in Southern Africa
Phumelela Mjoli, University of Pretoria, South Africa

The effects of Stakeholder Perceptions on the Content of the Computer Crime and Cybersecurity Bill: A Case of Lesotho
Ayanda Pekane, University of Cape Town, South Africa

Digital Forensics Investigations on Evolving Digital Ecosystems and Big Data Sharing: A Survey of Challenges, and Potential Opportunities
Pertunia Senamela, CSIR, South Africa

Strengthening South Africa's Cybersecurity Strategy: Insights from a Thematic Analysis
Thulisile Mkhwanazi, Nelson Mandela University, South Africa

11:00 Session 6b eHealth 4

Chair: Titus Kisangau, National Research Fund, Kenya

Early Warning and Monitoring System for Asthmatic Patients
Fidelis Ayite, Carnegie Mellon University, Ghana

Enhancing Public Health Outcomes: Machine Learning for Early Dengue Fever Detection in LMICs
Faith-Michael Uzoka, Mount Royal University, Canada

Enhancing Rural Healthcare with an Automated Ensemble Machine Learning Intelligent Agent for Real-Time Diabetes Diagnosis
Casam Nyaga, Chuka University, Kenya

mHealth Continuance Behaviour among People Living with HIV in Developing Countries: A Rapid Review
Wilfred Odoke, University of Nairobi, Kenya

11:00 Session 6c: Technology-Enhanced Learning 4

Chair: Tlou Ramabu, Tshwane University of Technology, South Africa

Teaching Component-Based Software Engineering and Visual Programming Language Techniques to Information Technology Students in Kenya
Isaac Nyabisa Oteyo, Jomo Kenyatta University of Agriculture and Technology, Kenya

Community-based Co-design of a Deaf Education Annotation Framework (DEAF)
Zander Vermeulen, Stellenbosch University, South Africa

Exploring Emerging Technologies for Inclusive Education in Students with Learning Disabilities: A Systematic Literature Review
Jack Odunga, United States International University-Africa, Kenya

Enhancing Diversity in Inclusive Learning Classroom Using OpenAI Whisper Model
Khumbulani Hlongwane, Durban University of Technology, South Africa

11:00 Session 6d: Content Technologies 1

Chair: Paul Cunningham, IST-Africa Institute, Ireland

Misinformation Detection in COVID-19 News for Low-Resource Languages: A Sesotho Case Study
Seani Rananga, University of Pretoria, Data Science for Social Impact (DSFSI), South Africa

Explainable AI for Truthful Misinformation Detection: An Afrikaans Language Case Study
Arno Jooste, University of Pretoria, Data Science for Social Impact (DSFSI), South Africa

Hate Speech Detection in isiZulu: A Semantic Approach
Mahlatse Mbooi, CSIR / University of Pretoria, Data Science for Social Impact (DSFSI), South Africa

Detecting COVID-19 Misinformation in Sepedi Short Texts Using Data Augmentation Techniques
Manyako Manaswe, University of Pretoria, Data Science for Social Impact (DSFSI), South Africa

12:30	Lunch

14:00 Session 7a: Cyber Security 3

Chair: Laura Odhiambo, National Research Fund, Kenya

Assessing Cybersecurity Readiness: Methods for Evaluating Prospective Undergraduate Students' Preparedness Before Transitioning to University
Nick Rwandarugali, University of Cape Town, South Africa

Addressing the Cybersecurity Workforce Gap: Lessons from the Cyber Shujaa Program in Kenya
Paula Musuva, USIU-Africa, Kenya

Building a Theoretical Framework Using a Multi-Theoretical Approach: A Case of Privacy Theories
Phumezo Ntlatywa, Sol Plaatje University, South Africa

Assessing Cybersecurity Threat Avoidance Factors Influencing User Attitudes in Mobile Financial Services in the Context of Kenya
Washington Omollo, University of KwaZulu-Natal, South Africa

14:00 Session 7b: eHealth 5

Chair: Evelyn Mbaabu, National Commission for Science Technology and Innovation, Kenya

Impact of Inadequate Knowledge Management in Healthcare and The Role of Clinical Information Systems: A View from Doctors
Edmond C Kungwalo, University of Malawi, Malawi

Medirafiki: A User-Centric Digital Platform for Enhancing Family Planning Education in Kenya.
Andrew Mbabu, Kabarak University, Kenya

Leveraging Electronic Syndromic Surveillance Synthetic Data to Predict Diarrhoea in Zimbabwean Children Under-Five: An Explainable AI Framework
Ussen Kimanuka, Pan-African University, Kenya

14:00 Session 7c: Technology-Enhanced Learning 5

Chair: Caroline Munyiri, State Department for Science, Research, and Innovation, Kenya

A Comparison of Three AI Tutoring Bots Communicating in isiZulu using OpenAI's GPT-3.5-turbo, GPT-4-turbo, and GPT-4o
Laurie Butgereit, Nelson Mandela University, South Africa

Leveraging Routine Data and Local Weather Variables for Malaria Case Prediction in Tanzania: A Deep Learning Approach
Janice Maige, University of Dar es Salaam, Tanzania

Personalized Learning Paths: Bayesian Network-Based Pre-assessment Grouping
Mary Asunta Gaceri, Meru University of Science and Technology, Kenya

Automatic Grading of Linux Commands using String Similarity Measures
Kanegelo Amos Phuduhudu, Tshwane University of Technology, South Africa

15:30	Coffee Break & Networking

16:00 Session 8a: Cyber Security 4

Chair: Jacob Njagih, National Research Fund, Kenya

Top Crypto Scams in 2022-2024: Analysing Trends, Tactics, and Regulatory Responses
Johannes George Botha, CSIR, South Africa

Survey of Techniques for Mitigating Reactive Jamming Attacks in Internet of Things Networks
Enos Letsoalo, Tshwane University of Technology, South Africa

A Cybercrime Incident Response Management and Recovery Framework for Kampala Metropolitan Area
Alaphat Ummusalaam, Islamic University in Uganda, Uganda

Modeling Resilience In Cybersecurity: A Systems Dynamics Approach to Predictive Threat Response and Adaptive Security Policies
Amos Omamo, Meru University of Science and Technology, Kenya

Impact of Phishing Attacks on Mobile Intelligent Agent Systems
Mashako David Manyama, University of KwaZulu-Natal, South Africa

16:00 Session 8b: eAgriculture & Environmental Sustainability 1

Chair: David Wekesa, Multimedia University of Kenya, Kenya

An AI-Driven IoT Framework for Aquaculture Management
Anthony Wambua, Daystar University, Kenya

Camera Trap Data Analysis For Grevy's Zebra Monitoring
Victor Ruto, Dedan Kimathi University of Technology, Kenya

Deployment and Evaluation of the Autonomous Monitoring of Insects (AMI) System for Ecosystem Health Assessment in Kenya
Paul Bett, Dedan Kimathi University of Technology, Kenya

Using Deep Learning Techniques to Monitor a Reforested Stand In Kenya
Samuel Gachana, Dedan Kimathi University of Technology, Kenya

The Development of Ilima: An African Platform for Smallholder Supply Chain Integration
Chanel Schoeman, CSIR, South Africa

16:00 Session 8c: Technology-Enhanced Learning 6

Chair: Paul Cunningham, IST-Africa Institute, Ireland

Designing Animation Programs for Teaching and Learning Programming by Following Principles of Multimedia Learning
Tlou Ramabu, Tshwane University of Technology, South Africa

From Slide to Simulation - Histolab: Developing a Gamified Immersive application for Histology Education
Kaylyn Fritz, University of the Western Cape, South Africa

Fostering Understanding of Rocks and Minerals for Novice Students through Augmented Reality
Mihlali Cuba, University of the Western Cape, South Africa

DigiDoseAR: Redefining the Future of Pharmacy Education with Augmented Reality
Jabulani Rumo, University of the Western Cape, South Africa

18:00	End of Parallel Sessions

3 DAY

Friday, May 30, 2025

09:00 Session 9a: Societal Implications of Technology

Chair: Titus Kisangau, National Research Fund, Kenya

People First: Humanism is Back
Alfredo Ronchi, Politecnico di Milano, Italy

The Effects of Mobile Money on Inequality: A Panel Data Analysis
Enrico Nichelatti, University of Luxembourg, Luxembourg

The Effect of Digital Literacy Skills on Rural Kenyans' Smallholder Farmers' Livelihoods
Jimmy Macharia, United States International University, Kenya

Towards Developing a Software Ethics Assessment Tool at Dedan Kimathi University of Technology
George Musumba, Dedan Kimathi University of Technology, Kenya

09:00 Session 9b: eAgriculture & Environmental Sustainability 2

Chair: Jacob Njagih, National Research Fund, Kenya

Design and Implementation of a Real-Time Groundwater Monitoring System Using IoTs
Banjo Ayoade Aderemi, Tshwane University of Technology, South Africa

Investigation of Physical Parameters for Groundwater Quality using Geography of Things -based System
Thomas Olwal, Tshwane University of Technology, South Africa

Water Parameter Estimation Application Using Statistical Learning
Peter Phiri, Sustainable Water Irrigation and Farming Technology, Malawi

Leveraging AI Models for Regional Weather Prediction: A Data Pipeline for Africa
Teofilo Ligawa, Dedan Kimathi University of Technology, Kenya

09:00 Session 9c: Content Technologies 2

Chair: Anthony Karanja, Multimedia University of Kenya, Kenya

Development of a WhatsApp bot to detect Disinformation
Zelalem Sintayehu Shibeshi, Rhodes University, South Africa

Neural Machine Translation in Low-Resourced Languages: Case of Dholuo – Swahili Translation
Peter Kimanga, Dedan Kimathi University of Technology, Kenya

Optimising SQL Generation for Afrikaans through an English-to-Afrikaans Double Translation Method
Reuben Jooste, University of Pretoria, Data Science for Social Impact (DSFSI), South Africa

Fine-Tuning A Machine Learning Model to Detect COVID-19 Misinformation In Xitsonga
Masana Baloyi, University of Pretoria, Data Science for Social Impact (DSFSI), South Africa

10:30	Coffee Break & Networking

11:00 Session 10a: Global Development

Chair: Paul Cunningham, IST-Africa Institute, Ireland

Social ISP for Reducing Digital Inequality
Marko Nieminen, Aalto University, Finland

Evidence and Gap on Mobile Internet Usage in Sub-Saharan Africa and South Asia
Jonathan Muringani, Basic Internet Foundation, Norway

Exploring an AR-based Implementation for Architectural Engineering
Alithemba Luthando Makongwana, University of the Western Cape, South Africa

Three Years of 3D Printing – Analysis of a Small-scale Manufacturing Hub in Kenya
John Gershenson, The Pennsylvania State University, United States

Exploring the Challenges of growing Technology Startups: A Case of Silicon Dar
Abubakar Bakari, The State University of Zanzibar, Tanzania

11:00 Session 10b: eAgriculture & Environmental Sustainability 3

Chair: Joyce Ngure, State Department for Science, Research, and Innovation, Kenya

Remote Sensing Application in Maize Production: A Bibliometric Analysis
Simbarashe Jombo, Sol Plaatje University, South Africa

A Min-Max Based Data Normalization and Maximum Pooling Approach for Improved Maize Leaf Disease Detection
Damaris Waema, Jomo Kenyatta University of Agriculture and Technology, Kenya

Smart and Sustainable Economic and Indigenous Farming: Modern Innovation with Traditional Wisdom Bridged
John Makhetha Nyetanyane, Central University of Technology, South Africa

The Influence of Mobile Phone-Based Agricultural Information Platforms on Access to Extension Services: A Case of M-Kilimo in Dodoma, Tanzania
Hosea Mpogole, Institute of Rural Development Planning, Tanzania

11:00 Session 10c: Content Technologies 3

Chair: Laura Odhiambo, National Research Fund, Kenya

Copyright Issues Arising from Digital Technology in Museums: a Kenyan Case Study
Kioko Mwania, Ministry of Higher Education, Science and Technology, Kenya

Developing a Machine Learning Predictive Model for Mobile Network Traffic Forecasting in Malawi
Rachel Sibande, Malawi University of Science and Technology, Malawi

Evaluating the Facilitating Conditions towards the Integration of GenAI in Knowledge Sharing for SMEs
Stevens Mamorobela, University of South Africa, South Africa

The Challenges of Indoor Navigation: LiDAR-AR Exploring Solutions Beyond GPS
Mushabalo Magada, University of the Western Cape, South Africa

12:45 Closing Plenary 11a:

Chair: Paul Cunningham, IST-Africa Institute, Ireland

Showcasing Success Stories on ICT4D in Kenya
Prof. Elijah Omwenga, Vice Chancellor, The Open University of Kenya, Kenya

Showcasing KENET's Contribution to Kenya's Research and Innovation Ecosystem
Prof. Meoli Kashorda, Executive Director, Kenya Education Network, Kenya

Closing Remarks
Dr Gatama Gichini, State Department for Science, Research, and Innovation, Kenya

| 14:00 | Lunch & Networking |