

CURRICULUM VITAE

STEPHEN KAHARA WANJAU

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PROFESSIONAL SUMMARY

Dr. Stephen Kahara is a seasoned ICT professional and academic with over fifteen years of experience and a strong academic foundation, holding a Ph.D. in Computer Science. Currently serving as a Lecturer in the Computer Science Department and Director of Performance Contracting and ISO at Murang'a University of Technology, Dr. Kahara brings a wealth of expertise in strategic leadership, process improvement, and project management. As a trained auditor of QMS and ISMS management systems and an alumnus of the DAAD-supported UNILEAD program, he excels in bridging theoretical knowledge with practical application. His research interests span machine learning, network security, distributed systems, and computational biology, reflected in his authored journal articles, book chapters, and conference papers. A member of the Association of Computing Practitioners - Kenya (ACPK), Dr. Kahara is passionate about leveraging technology for innovation and organizational efficiency. His proficiency in data management, analytics, and risk management, combined with his academic rigor and industry insight, positions him as a valuable asset in both educational and professional spheres.

CORE COMPETENCES

- High level of accountability and integrity
- Customer-centric with a high degree of both pro-activity and responsiveness
- Excellent oral and written communication
- Results Oriented
- Building Strategic Partnerships
- Informed and transparent decision making
- Good knowledge of corporate systems and associated system integration and relationships
- Data Management and Analytics
- Enterprise Risk Management
- Compliance Management
- Conflict resolution and problem solving
- Team building and training

QUALIFICATIONS

Educational

Year (s)	Qualification	Institution
2019 – 2023	Doctor of Philosophy in Computer Science	Murang'a University of Technology
2013 – 2018	Master of Science in Computer Systems	Jomo Kenyatta University of Agriculture and Technology
2009 – 2010	Executive Master of Science in Organizational Development	United States International University - Africa

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2002 – 2006	Bachelor of Science in Information Sciences Second Class Honours, Upper Division	Moi University
1997 - 2000	KCSE (Kenya Certificate of Secondary Education) Grade: B+ (Plus)	Kiambu High School
1989 - 1996	KCPE (Kenya Certificate of Primary Education) Grade: 496 Marks out of Possible 700	Ndireti Primary School

Professional Training

Period	Qualification	Institution
14 th – 18 th Feb 2022	ISO/IEC 27001:2013 (ISMS) Implementer	ACAL Consulting
Sept - October - 2021	Online Education - Skills for Prosperity Kenya	The Open University, UK
30 th Nov – 2 nd Dec 2019	Leadership & Corporate Governance Training,	Murang'a University of Technology
20 th - 22 nd Sept. 2017	ISO 9001:2015 Internal Auditor	ACAL Consulting
June 29 – July 1 st 2015	Management Skills Development and Team Building	Kenya School of Government
Jan – April 2013	Monitoring and Evaluation Certification	Kenya Institute of Management
Nov 2007	Fundraising & Resource Mobilization in the Global Market	Kenya Association of Fundraising Professionals & Resource Alliance
June 2004	Leadership and Team Building	HEZZ Communications Ltd

EMPLOYMENT/WORK EXPERIENCE

November 2023 – To Date **Lecturer** **Murang'a University of Technology**

Reporting to the Chairman of Department (Computer Science) the Lecturer is responsible for providing instruction on a wide range of computer science courses, contribute skills to ground breaking research and carry out administrative tasks within the Department.

Responsibilities:

- (a) To teach at undergraduate and graduate level in areas allocated by the Chairman of Department

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- (b) To obtain research funding and provide high quality outputs and publications in Computer Science or related disciplines
- (c) To engage with the broader scholarly and professional communities.
- (d) To supervise or assist with supervision of undergraduate and graduate (Masters, PhD) students.
- (e) To contribute to the development, planning and implementation of a high-quality curriculum.
- (f) To assist in the development of learning materials, preparing course outlines and maintaining records to monitor student progress, achievement and attendance.
- (g) To participate in departmental and school seminars aimed at sharing research outcomes and building interdisciplinary collaboration within and outside the department.
- (h) To participate in the development, administration and marking of exams and other assessments.
- (i) To participate in the administration of the department's programmes of study and other activities as requested.
- (j) To contribute to departmental, school, or university-wide working groups or committees as requested.
- (k) To maintain own continuing professional development.

July 2022 – To Date Director, PC&ISO Murang'a University of Technology

Reporting to the Deputy Vice-Chancellor (Finance and Development) the Director, Performance Contract & ISO role is to ensure effective and efficient implementation of performance contract targets by the various target owners as well as ensure compliance with the ISO Standard requirements and the established management systems.

Responsibilities:

- Lead in the alignment performance targets with the approved University Strategic Plan
- Take lead in the annual performance contract preparation, negotiations, and evaluations
- Providing guidance concerning the technical implementation of the annual performance contract
- Monitor achievement of targets, receive, review, and submit progress reports and final reports to the University Council for approval and submission to the relevant government agencies
- Coordinate the gathering and consolidating evidences for performance contract evaluation
- Ensure conformity to ISO 9001:2015 and ISO/IEC 27001:2013 Standards and data security requirements.
- Oversee the implementation, maintenance and continuous improvement of the quality management system and university processes and procedures
- Coordinate regular audits and analyze data to identify areas for improvement in the management systems
- Identify, recommend and monitor corrective and preventive actions
- Evaluate audit findings and implement appropriate corrective actions
- Provide training on compliance standards to employees

April 2016 – June 2022 Director, ICT Murang'a University of Technology

Reporting to the Deputy Vice-Chancellor (Finance and Development) the Director of ICT role is to drive both the ICT strategy and day-to-day operational ICT and Web services provision. The ICT

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Director also ensures that MUT staff and clients have suitable technical resources, applications, and support to achieve their objectives effectively, securely, and with a competitive and innovative edge compared with other institutions of higher learning. All of this is to be achieved within reasonable budget constraints.

Responsibilities:

- (a) Making proposals for strategic direction on information technology and providing mechanisms for its implementation;
- (b) Provision of policy direction on ICT systems;
- (c) Regularly reviewing and making proposals for updating the ICT policy and strategy;
- (d) Carrying out system analysis, design & program specifications in liaison with the users;
- (e) Promotion of the use of ICT in the University;
- (f) Developing, implementing & maintaining systems;
- (g) Ensuring adherence to established ICT standards;
- (h) Supervising installation, certification, and carrying out of repair & maintenance of all ICT equipment & associated accessories;
- (i) Recommending hardware/software specifications for ICT equipment;
- (j) Preparing and submitting Information Communication Technology (ICT) status reports;
- (k) Provision of user support including staff training, access, and security of the system;
- (l) Ensuring efficiency in the delivery of ICT services;
- (m) Scheduling preventive maintenance of all ICT equipment in the University;
- (n) Ensuring that ICT services in the University are updated and kept abreast with emerging information communication technology trends;
- (o) Performing such other duties as may be assigned from time to time by the Council and the Vice Chancellor

June 2013 – March 2016

Ag. ICT Manager

Murang'a University College

Reporting to the Principal, the ICT Manager's role was to manage and oversee the Information Communications Technology function and ensures continuous operation and cost-efficiency of the University College systems, network, database architecture, and data security, in order to achieve consistency and reliability of hardware, software, non-system tools, data archiving and offsite disaster recovery management.

Responsibilities:

- a) Prepare strategic and operational plans for the Information Communications Technology (ICT) department to ensure that all necessary ICT tools, processes, and systems are in place to meet the requirements of the University College and contribute to the achievement of its short- and long-term goals.
- b) Ensure development, implementation, and maintenance of all policies related to ICT services, including procurement, distribution, and asset management.
- c) Develop and manage the planning and budgeting for the University College's ICT services to ensure that resources are used to provide best-in-class ICT services that are in line with its growth.
- d) Oversee the implementation and maintenance of technology infrastructure in line with the University College growth plans, and changing business requirements or technological advancements.

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- e) Ensure ICT systems comply with regulatory and legal requirements.
- f) Exercise control and monitoring of corporate ICT projects progress.
- g) Oversee ICT special projects, including planning, scheduling, managing, and reporting progress for new system implementations.
- h) Ensure continuous improvement of the quality and cost efficiency of the ICT Services.
- i) Direct and supervise subordinates to ensure they fulfill their duties in the ICT function.

October 2010 – May 2013 ICT Coordinator Family Health International (Phi360)

Reporting to the Program Manager, the ICT Coordinator's role was to provide technical assistance and project management in the implementation of the USAID-funded Teacher Education and Professional Development (TEPD) program with a specific focus on the Accelerating 21st Century Education (ACE) component, a public/private partnership with Ministry of Education, USAID, Intel, Microsoft, and Cisco.

Responsibilities:

- a) Strategically coordinate and manage the implementation of ACE project activities, trainings, and evaluation to improve the quality of education through the effective use of technology.
- b) Take part in the design of tools and methodologies for the delivery of capacity development services. The tools include but are not limited to assessment tools, training modules and manuals, coaching and mentoring support techniques, reporting templates.
- c) Provide ongoing technical support and mentoring at 23 schools and 3 colleges to assist them in using ICTs in the classroom.
- d) Provide the TEPD and ACE partnership with quality information, observations, comments, and recommendations to support the implementation of ACE activities.
- e) Proactively assess needs for schools and college management and teachers that would assist in developing a sustainable culture of reform for ICT

Feb 2008 – Sep 2010: IT Projects Coordinator Computers for Schools Kenya Nairobi - Kenya

Reporting to the Operations Director the role of the IT Projects Coordinator was to take charge and be responsible for planning, directing, organizing, and controlling project activities.

Responsibilities:

- a) Assist the Operations Director in the drafting and issuance of project proposals, RFPs, tenders, budgets, cash flows, and preliminary schedules
- b) Effectively and accurately communicate relevant project information to the clients and project team
- c) Ensure clients' needs are met in a timely and cost-effective manner
- d) Ensuring the implementation of the projects activities as per the schedule
- e) Keep the Operations Director and others informed about projects status and issues that may impact client relations
- f) Monitoring and control of resources, revenue, and capital costs against the projects budgets in accordance with donor policies and procedures
- g) Providing any technical support to projects teams

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Jan 2007 - Jan 2008: **Technical Support Officer** **Computers for Schools Kenya**
Nairobi - Kenya

This role required one to provide expertise in installation, maintenance and support of computer systems by ensuring that they run smoothly and providing technical assistance and front-line advice to users.

Responsibilities:

- a) Provide ICT hardware/software support including:
 - i). Resolving reported faults with either hardware or software
 - ii). Imaging and installation of PCs and laptops
 - iii). Installation of printers, phones, and other smaller devices
 - iv). Installation and configuration of software.
 - v). Provide assistance and advice to staff and students regarding use of hardware and software
- b) Provide front-line network support including:
 - i). Patching up data points
 - ii). Connecting patch cords to switches
 - iii). Assisting with switch installation
 - iv). Diagnosing and resolving lower-level network faults
- c) Provide technical assistance and front -line support for the ICT systems.
- d) Ensure that inventory information for equipment is kept up to date
- e) Carry out any other ICT-related duty as designated by the Head of ICT Infrastructure.

PUBLICATIONS

Peer-Reviewed Publications

- S. K. Wanjau**, G. M. Wambugu, A. M. Oirere, [Evaluating Linear and Non-Linear Dimensionality Reduction Approaches for Deep Learning-based Network Intrusion Detection Systems](#), *International Journal of Wireless and Microwave Technologies (IJWMT)*, vol.13, no.4 doi: 10.5815/ijwmt.2023.04.05
- Wanjau, S.K.** , Mariga, G. M. & Oirere A.M. (2022). [Network Intrusion Detection Systems: A Systematic Literature Review of Hybrid Deep Learning Approaches](#). *International Journal of Emerging Science and Engineering (IJESE)*, 10(7), 1-16. doi: 10.35940/ijese.F2530.0610722.
- Wanjau, S. K.**, Wambugu, G. M., Oirere, A. M. and Muketha, G.M. [Discriminative Spatial-Temporal Feature Learning for Modeling Network Intrusion Detection Systems](#), *Journal of Computer Security*, vol. Pre-press, no. Pre-press, pp. 1-30, 2023. doi: 10.3233/JCS-220031
- Wanjau, S.**, Mariga, G. & Kamau, G. (2021). [SSH-Brute Force Attack Detection Model based on Deep Learning](#). *International Journal of Computer Applications Technology and Research*, 10(1), 42-50. ISSN: 2319-8656.
- Wanjau, S.**, & Muketha, G. (2018). [Improving Student Enrollment Prediction Using Ensemble Classifiers](#). *International Journal of Computer Applications Technology and Research*, 7(3), 122-128. ISSN: 2319-8656.
- Wanjau, S.**, Okeyo, G., & Rimiru, R. (2016). [Data Mining Model for Predicting Student Enrolment in STEM Courses in Higher Education Institutions](#). *International Journal of Computer Applications Technology and Research*, 5(11), 698-704. ISSN: 2319-8656.

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Book Chapter

- Wanjau, S.K., & Muketha, G.M.** (2021). [A Novel Hybrid Deep Learning Model for Early Detection of Diabetic Retinopathy](#). In Amutabi, M.N.(Ed.), *New Trends of Global Influences in Africa* (pp. 73-89). CEDRED Publications, Nairobi, Kenya. ISBN 978-9966-116-55-0
- Wanjau, S. K.** (2020). [Enterprise Resource Planning System Implementation in Higher Education Institutions: A Theoretical Review](#). In G. Muketha, & E. Micheni (Eds.), *Metrics and Models for Evaluating the Quality and Effectiveness of ERP Software* (pp. 236-264). Hershey, PA: IGI Global. doi:10.4018/978-1-5225-7678-5.ch010

Conferences

- S. K. Wanjau, G. M. Wambugu, A. M. Oirere,** "[Empirical Evaluation of Adaptive Optimization on the Generalization Performance of Convolutional Neural Networks](#)," In Proceedings of the Kabarak University International Conference on Computing and Information Systems, Nakuru, Kenya, 4th - 8th October, 2021.
- K. Wanjau, G. Mariga and A. Oirere,** "[Evaluation of the Impact of Empirical Risk Minimization on Supervised Deep Learning Model Generalization and Selection](#)," in MURANG'A UNIVERSITY OF TECHNOLOGY INTERNATIONAL CONFERENCE ON TECHNOLOGY AND INNOVATION FOR SUSTAINABLE DEVELOPMENT, Murang'a, Kenya, 3rd - 5th November, 2021.

AWARDS & RECOGNITIONS

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| ▪ Outstanding Academic achievement for the best GPA (3.95)
Master of Science in Organizational Development,
United States International University - Africa | August 2010 |
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ADDITIONAL QUALIFICATIONS

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| ▪ Attended the ISO 9001:2015 implementers Training Course | 15 th - 17 th May 2017
Murang'a, Kenya |
| ▪ Participated in E-Procurement and E-Bidding in Government | 28 th - 29 th August 2014
Nairobi, Kenya |
| ▪ Participated in the Regional Education Conference on e-Learning | 29 th - 31 st March 2010
Nairobi, Kenya |
| ▪ Participated in the Second Pan-African Conference on ICT for
Development, Education and Training | 28 th - 30 th May 2007
Nairobi, Kenya |

SERVICE AND ACTIVITIES

Committee Member

- University Students Disciplinary Committee
- University Senate Board
- University Performance Contracting and ISO Board
- University Deans Committee
- University Budget Committee
- ICT Advisory Committee
- Library Advisory Committee

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- University Journal Editorial Board
- University Conference Steering Committee

PROFESSIONAL MEMBERSHIP

- Association of Computing Practitioners - Kenya (ACPK) 2020 – Present
- IEEE Graduate Student Member since 2018
- ACM Student Member since 2020

HOBBIES

Internet surfing, reading fiction, and travelling, playing sports, listening to music, and solve puzzles

REFEREES

1. Prof. Geoffrey Muchiri,
Professor of Computer Science,
Director, Board of Postgraduate
Studies
Murang'a University of Technology
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