



Samuel Njuguna Ruhii

P. O. Box 30197, 00100,

Nairobi

Kenya

Office Tel: 254-20-4444919

Mobile Phone: 254-727791212

Email: samruhiu@uonbi.ac.ke; samuel.ruhii@gmail.com

Profile

Passionate researcher and practitioner in the domains of ICTs for Development (with an emphasis on Poverty Reduction) and design for development, with a commitment to results dissemination through publication, teaching and design of usable ICT4D solutions. Currently involved in action research in the use of ICTs in community innovations for poverty reduction.

Key Qualifications

PhD (Information Systems) graduate of the University of Nairobi, and a MSc. Computation graduate of the University of Manchester.

Major Achievements

- PhD (Information Systems). Explored how to empower poor communities to escape poverty using community ICT Interventions.
- Involved in the Participatory strategy formulation for Rift Valley Innovation Centre – a rural innovation centre serving six counties in upper Rift Valley, Kenya.
- Trained and mentored innovation teams for research and development of MNCH health-promoting/enhancing devices in low-resource settings.
- Developed and reviewed undergraduate and Master's curricula in computer science and information systems.
- Developed curriculum, lecture notes and e-learning content for a health informatics fellowship at the University of Nairobi.
- Developed a strategy for the Centre of Excellence in ICT Computing and Informatics research at the University of Nairobi
- Developed a franchising strategy and model for the University of Nairobi's diploma program in Computer Science

- Successfully supervised Masters Dissertations in Computer Science and Information Systems.
- Lectured and researched in Computer Science and Information Systems for over 18 years at universities in Kenya.
- Designed and supervised the development, testing data migration for a utility billing software in use by utilities providers in Kenya, Eritrea and Djibouti

Career History

Lecturer: School of Computing and Informatics, University of Nairobi: June 2004 to date

Teaching:

My duties in the school have included teaching at both undergraduate and postgraduate level. Modules taught at the undergraduate level have include

- Human Computer Interaction;
- Systems Analysis and Design;
- Design Thinking;
- ICTs and Society.

I have lectured at the master's level both in Information Systems and Computer Science. The courses taught include:

- User Experience Design.
- Innovation Studies
- ICT Project Management;
- Information Systems Strategic Management;
- Business Process Engineering;

I have also supervised many M Sc. dissertation projects in Information Systems and Computer Science.

July 2010 to date: Teaching Health Information Systems Analysis and Design, and Foundations of Health Informatics modules of the UON-HIV Fellowship program.

2004 to date: Adjunct Lecturer for University of Sunderland Programs at INTEL College, Nairobi.

Undergraduate

Modules taught include:

Human Computer Interaction

Systems Analysis and Design

User Experience Design

Graduate:

Modules taught include:

- Project Management and Practice
- International Project Management

- M Sc. Dissertation Proposal Preparation

2003 – 2005: I was the undergraduate course coordinator, assisting students and lecturers with matters academic (course allocation, time tabling, course information, etc).

2001 to date: I have been the SCI's representative to the UON Senate.

1999 – 2004: Assistant Lecturer – School of Computing and Informatics, University of Nairobi

I was involved in teaching at the undergraduate and postgraduate level, supervision of Masters dissertation projects and curriculum review

1998 – 1999: Temporary Lecturer – School of Computing and Informatics

Involved in Teaching at the Undergraduate and postgraduate level

Innovation of Health Promoting Devices for MNCH in Low-resource Setting

2016: November – December

Facilitating and mentoring of multidisciplinary innovation teams at the University of Nairobi Science and Technology Park. The teams composed of third year – fifth year students from different disciplines working on MNCH challenges to design and prototype health promoting/enhancing devices in low-resource settings. The design challenges were supported and/or funded by UNICEF, Philips Foundation, Concern Worldwide, and Kenyatta National Hospital. I was training the teams in design thinking techniques to aid innovation. I then mentored the teams in the different phases, from empathy to design, to prototyping and testing.

Curriculum Development and Review:

School Of computing and Informatics

Undergraduate

2010 (April – July): Participated in the comprehensive review of the UON-SCI Bachelor of Science (B Sc.) in Computer Science curriculum review. This incorporated input from various stakeholders, including the students, alumni, industry and government. It also involved international benchmarking.

2005 (June – August): B Sc. Curriculum review. This was carried out with the rest of the faculty and resulted in a curriculum reflecting cutting edge knowledge and practice in Computing.

2000 (May – July): First major B Sc. curriculum review. This resulted in a modularized B. Sc. Program: Diploma (Year 1 and 2) and Degree (Year 2 and 3). It also introduced new courses and specializations.

Graduate

2013 (April – June): Participated in the first major review of the Masters Programs. Reviewed the existing M. Sc. Information Systems and M. Sc. in Computer Science and recommended creation of four new programs: M Sc. Applied Computing, M Sc. Computational Intelligence, M Sc.

Distributed Computing, and M Sc. Information Technology Management. I was involved in creating detailed curriculum, course outlines and content for the M Sc. Applied Computing course units

UON-HIV Fellowship Program

2013 – 2016: Curriculum Development, module content creation and conversion to e-learning format

2015 (Feb – April 2015): I developed the new Health Information Systems Analysis and Design Module content, and the teaching and delivery guide. The module was part of the Health Informatics track of the UON-HIV Fellowship program

2015 (Jan – Feb): I reviewed the existing Health Information Systems Analysis and Design Module and designed the detailed new curriculum and course outline (of the UON-HIV Fellowship program).

2014 (May – July): Participated in the UON HIV Fellowship Program review. The Fellowship is HIV management capacity development fellowship, funded by USAID and administered by the University of Nairobi's Institute of Tropical and Infectious Diseases (UNITID), University of Washington and Management Sciences for Health (MSH). The program is divided into five tracks (Health Economics, Health informatics, Program Management, Epidemiology and Bio-Statistics, and Monitoring and Evaluation). The comprehensive review of the fellowship program took place at the expiry of the Phase I funding cycle, and the beginning of Phase II. This involved the different stakeholders and various experts from the University of Nairobi, University of Washington, MSH, and various other partnering organizations. I was part of the team that did the review of the whole program structure and made recommendations for the different program tracks.

2014 (July, Aug): Was part of the team that did a comprehensive review and rewriting of the Health Informatics track curriculum of the UON-HIV Fellowship:

2014 (Feb – April): Was part of the team that converted the UON-HIV Fellowship's Foundations of Health Informatics Module for e-learning and created content for the e-learning delivery.

2014 (Jan – Feb): I was part of the team that reviewed the Foundations of the Health Informatics Module of the UON HIV Fellowship Program. The Foundations of health informatics is a core course that is undertaken by all the tracks.

Strategy Formulation:

November 2016: I was part of the team that facilitated the formulation of the strategy for the Rift Valley Innovation Centre (RVIC) – a centre

that is working to utilize community innovation to empower poor rural communities in six counties of the Rift Valley region, Kenya.

- 2012 (June – August): I was part of the team that conceptualized the SCI Centre of Excellence in Research and creating the strategy for the centre. This is a research centre domiciled as SCI, whose mission seeks to enhance research, R&D, ICT Product development and Societal problem-solving.
- 2013 (July, August): Involved in cascading, contextualizing and customizing the 2013-2018 University of Nairobi Strategy for the School of computing and Informatics (SCI)
- 2008 (August, September): Involved in cascading, contextualizing and customizing the 2008 University of Nairobi Strategy for SCI
- 2003 (July, August): Involved in cascading, contextualizing and customizing the 2003 -2007 University of Nairobi Strategy for the SCI
- 2004 (May – July): School of Computing and Informatics Research strategy development team member.
- 2001 (May – July): Participated in the process of recommending the un-bundling of the academic and ICT functions of the former UON Institute of Computer Science to create the UON ICT department and the School of Computing and Informatics. I was also part of the team that developed the strategies for both entities (SCI and ICT Department).

Business Development;

2003 (May, June): Involved in the conceptualization and development of the franchising model for the UON-SCI Diploma in Computer Science

2005 – 2008: Research Visits at the Study of Media and Information Technology (SMIT) Research Centre of the Free University of Brussels (Vrije Universiteit Brussel): Worked with Professor Leo Van Audenhove.

- 2005: (Feb, March): Research topics included Information Society policy and National ICT strategy
- 2006 (March, April): Research topics included Information Society, Technology forecasting and futures and their use in Knowledge society policy formulation
- 2007 (Feb, March): Researched on use of ICTs for Poverty Reduction
- 2008 (Feb, March): Researched on Capability Approach and Poverty Reduction

2000 – 2002: Software Development Consultant – Eaux De Africa Ltd/SULIS

I was in the team that designed and developed MAJICS – utility billing software for the National Water Corporation, Kenya, Asmara Water and Sewerage Company, Eritrea, and Djibouti Electricity Board, Djibouti. My duties included user needs gathering, analysis and design, and supervision of the programming, testing, and data migration, and

conversion of the MAJICS software to French. The Software is being used in different towns in Kenya, in Asmara and Djibouti.

2010 (September – December): I was in charge of requirements elicitation, systems analysis, requirements specification, and design

2001 (January – August): I supervised programming, testing and data conversion of the MAJICS Application.

2001 (September – November): After Eux de Africa/SULIS won a contract for the supply of an utility billing software for the Asmara Water and Sewerage Department, it was decided that MAJICS would be customized for Asmara. I was in charge of requirements gathering, systems analysis and design for customization of the software for Asmara City Water and Sewerage Billing.

December, 2001 – January 2002: I supervised the translation of the MAJICS system for Djibouti Electricity Company

1996 – 1998: Acquisition of a turnkey solution for billing and accounting functions of the Nairobi City Water and Sewerage Department.

I was a member of a consultancy team that undertook to facilitate the acquisition of a World Bank-funded turnkey information systems solution for the Water and Sewerage Department of the City of Nairobi. This involved requirements gathering and specifications, preliminary design and Request for Proposal preparation. I also got involved in the analysis of bids from the pre-qualified Software firms, and the recommendation of the supplier. I later got involved in preparing for outsourcing of the information Systems solution once funding for the project lapsed.

The duties included:

1996 (June – December): Requirements analysis, specification and Request for Proposal preparation

1997 (January – March): Bidding process by organizations from Africa, India and Israel.

1997 (April – August 1997): Evaluation and recommendation of the winning bid.

1998 (January – April): Preliminary study of an outsourcing solution

1997 – 1998 Installation, data migration, commissioning, administration and monitoring of the Custima Billing Software for the Nairobi City Council Water and Sewerage Department: June 1997 – September 1998

I part of the team that oversaw the installation, data migration, commissioning, training, system administration and monitoring of the system plus managing the process of meter reading, data capture billing and sending of the bills. The software dealt with large water consumers in the city.

1994 – 1996: Section Head – Monitoring Unit of the Water and Sewerage Department

Responsibilities involved collection and analysis of flow volumes, reservoir levels leakage data and water distribution management reports

1992 – 1994: M Sc. Computation at UMIST: October 1992 – February 1994

Undertaking the M Sc. Program at UMIST.

1989 – 1992: Design Engineer – Planning, Design and Construction section of the Water and Sewerage Department: 1989 – September 1992

Duties included design, contract documents preparation, contract management and supervision of construction of various projects for the expansion and improvement of the Water distribution system. I also worked with a French consulting firm (Seureca) that undertook water leakage monitoring, measurement, and reduction.

1988 – 1989: Operations and Maintenance Engineer – Water and Nairobi City Council Water and Sewerage Department: January 1988 – February 1989

Duties included planning and administrative support for new connection to the city water distribution system, logistical and administrative support for the department's water treatment plants and trunk mains operations and maintenance

Qualifications/ Education

- PhD (Information Systems) of the University of Nairobi. Area of research – the use of Community ICT interventions for poverty Reduction. Thesis was entitled 'Exploring the Conversion of Community ICT Interventions to Basic Capabilities': September 2016
- Master of Science in Computation – University of Manchester: May, 1994
- Bachelor of Science (Hons) in Civil Engineering – University of Nairobi: October, 1987
- Design Thinking Training Seminar – (At the School of Computing and Informatics, University of Nairobi): Conducted by Faculty from D-School, Stanford University
- Communication and Proposal Writing Seminar, Jacaranda Hotel – Training Centre in Communication: March 2010
- Customer Service Excellence Seminar – Steadman Trains, Nairobi: July 1998
- Network Rehabilitation and Leak Detection – CEFIGRE, Bangkok: June 1990

Publications

Ruhiu, S. and Waema T., 2017. ICTs Adoption for the Poor? Factors Influencing the Adoption of ICTs Poor Rural Communities Electronic Journal of Information Systems in Developing Countries. [Submitted]

Ruhiu, S. and Waema T., 2017. From ICTs to Basic Capabilities: Opening the Black Box of Conversion. *Journal of Human Development and Capabilities* [Submitted]

Ruhiu, S. and Waema T., 2017. Towards a Design model for Innovative Health ICT Solutions for Developing Country Communities. The International Triple Helix Summit 2017. University of Nairobi, Kenya, April 4-6, 2017

Muiruri Chris Karumba, Samuel Ruhiu, Christopher A. Moturi. A Hybrid Algorithm for Detecting Web Based Applications Vulnerabilities. *American Journal of Computing Research Repository*. Vol. 4, No. 1, 2016, pp 15-20.

Ruhiu, S., 2013. Capability Approach Based ICT-for-Poverty Reduction Framework. Proceedings of the 12th International Conference on Social Implications of Computers in Developing Countries, Ocho Rios, Jamaica, May 19-23rd, 2013

Ruhiu, S., Rodrigues A. and Audenhove, L., 2009. Donor-Supported ICT-for-Poverty-Reduction Initiatives: Which Way Forward? VLIR-UIC-UON International Conference, February 2 – 5, 2009. Naivasha, Kenya

Ruhiu, S., Rodrigues, A., and Audenhove, L. 2007. Utilization of ICTs for Poverty Reduction: Towards a Poverty Reduction Framework. 1st International Conference in Computer Science and Informatics, February 5 – 7, 2007. Mbagathi, Nairobi, Kenya.

Ruhiu, S. and Rodrigues, A. 2005. Towards a Framework for ICT Uptake in Developing Countries. 1st Annual International Conference and Workshop on Sustainable ICT Capacity in Developing Countries, August 9 – 12, Makerere University, Kampala, Uganda.

Ruhiu, S. and Rodrigues, A. 2005. Relevant ICT Policy Framework: Including the needs of the Rural Poor Communities of the Developing World. VLIR-UIC-UON Research Symposium, January 31 – February 6, 2005. Mombasa, Kenya.

Master of Science Dissertations Supervised

Wanjohi, J. K., 2016 Assessing ERP Systems Post Implementation Success in Kenyan Corporates.

Maragia, A., 2016. E-Commerce Adoption by Insurance Companies in Kenya.

Muiruri, C. K., 2015. A Hybrid Algorithm for Detecting Web-based Applications Vulnerabilities

Wangutusi, G. N. M., 2015. An Exploration of how BYOD (Bring Your Own Devices) user behaviour impacts on an organization's information security: A case study of Madiso Insurance Company Kenya Limited.

Murimi, G. M., 2014. Assessing the suitability of implementing an integrated Electronic Common Technical Document (eCTD) and the Clinical Trials Registry (CTR) architecture in the submission and review of therapeutic products in the medicines registration process at the Pharmacy and Poisons Board Kenya. School of Computing and Informatics, University of Nairobi

Makewa J., 2013. Assessment of the Effects of ICT Reforms on the Pension Business Process. A Case of Pension Department, Ministry of Finance in Kenya.

Mbunya, T. N., 2012. An Assessment of the Factors that Influence the Adoption of Internet via a Mobile Phone in Kenya. School of Computing and Informatics, University of Nairobi

King'ori, A. M., 2012. Adoption of Mobile Internet Among University Students in Kenya. School of Computing and Informatics, University of Nairobi

Njagi, A. W., 2012. A Knowledge Management Model for the Public Sector. Case: Teachers Service Commission. School of Computing and Informatics, University of Nairobi

Iteere, B. M., 2012. E-Waste Management Framework for Kenyan Universities. School of Computing and Informatics, University of Nairobi

Oroko, L. K., 2012. Adoption of m-Government in the Civil Service. Case Study of the Ministry of Information and Communication, Kenya. School of Computing and Informatics, University of Nairobi

Onyango, J. O., 2006. Software Quality Assurance: A Case Study of the University of Nairobi. School of Computing and Informatics, University of Nairobi

Imbira, A., 2005. Analysis of E-Readiness for the Implementation of E-Government in Developing Countries. A Case Study of Kenya. School of Computing and Informatics, University of Nairobi

Mbero, Z. A., 2004. Software Acquisition Guidelines: The Case of Kenyan Private Organizations and Government Institutions. School of Computing and Informatics, University of Nairobi

Njoroge, E. W., 2003. Performance Evaluation of Electronic Commerce Websites from a Business Value Perspective: A Case of Walmart.com

Referees:

Timothy Waema

Professor

School of Computing and Informatics, University of Nairobi.

Email: waema@uonbi.ac.ke

Geoffrey F. Okao

Chief, Field IT Management Center and Regional IT Officer, Bureau for Eastern and Central Africa

UN Office at Nairobi, Gigiri, Nairobi

Official e-mail: geoffrey.okao@wfp.org

Gérard Pétroutchouk

Director

ASPA-SULIS Utilities

Email: "GPétroutchouk" <gerard.pétroutchouk@aspa-utilities.com>