CURRICULUM VITAE

DR. SAMUEL WAFULA BARASA
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Marital Status: Married
Nationality: Kenyan
Passport Status: Valid 15/10/19

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DR. SAMUEL WAFULA BARASA (PhD, MSc., BSc.) IT, Data Communication, Computer Science

PROFESSIONAL PROFILE	Competent IT professional with comprehensive technical skillset and expertise in Networking (Cisco Certified), System administration, System/Network security, systems modelling, project management, vendor and customer care relationships adhered towards upholding the normal standards of honesty and integrity. I'm a proficient problem-solver who envisions industrial-based and technical perspectives to develop workable solutions. Perform effectively both in individual and group projects by delivering good quality robust deliverables to deadline.
CAREER OBJECTIVE	To serve in a progressive institution/organization offering job satisfaction and challenging working environment with vast opportunities for career development based purely upon achievement and results with the aim of advancing my professional career in ICT, research and innovation.
EDUCATION	**Doctor of Philosophy in IT, Kibabii University, 2019** Research Title: Network Performance Metrics for Transition from IPv4 to IPv6 Networks **Masters of Science in Data Communications, KCA University, Kenya, 2013** **Bachelor of Science in Computer Science, Masinde Muliro University of Science & Technology (MMUST), Kenya, 2008** Graduated with Second Class Upper Division (Honors) **Ordinary-Level, Bungoma High School, Kenya, 1999-2001** Aggregate Grade: B Plain **Ordinary-Level, Bokoli Boys High School, Kenya, 1998** Form One **Primary Level, Mabanga Primary School, 1997**
CERTIFICATIONS & TRAINING	IBM Cloud Developer Explorer and Mastery Award Certification, IBM Africa Skills Academy, May 2020. Cisco Academy CCNA 1 & 2 Instructors Training, AFRALTI, Kenya, Jan 2012. Cisco Academy IT Essentials Instructors Training, AFRALTI, Kenya, Jan 2012.

CCNA (Cisco Certified Network Associate) Certification (examined and passed), Computer Pride Ltd, Kenya, Nov 2008.

CCNA (Cisco Certified Network Associate) Training, Smart Learning Centre, Kenya, Aug-Sept 2008

Research Training Certification (Writing Research Proposal & Dissertation, Data Collection & Analysis Techniques using SPSS software), Wabunifu Consultants Ltd, MMUST, February 2014.

Trained on ISO 9001:2000, Kenya Bureau of Standards' Quality Institute, March 2011.

Trained on Fundamentals of Web Applications, MMUST Directorate of ICT Services (DICTS), May 2010.

RESEARCH INTERESTS

Computer Networks, IPv4/IPv6 Networking Technology, Network Performance and Optimization, Big data and Data Mining, Computer System Security, and Internet of Things (IOTs).

EXPERIENCE

LECTURER, COMPUTER SCIENCE DEPARTMENT, KIBABII UNIVERSITY (KIBU): JUNE 2020 - TO DATE

Responsibilities

Teaching, mentorship, research and consultancy functions in the academic division.

ACTING DEAN, SCHOOL OF COMPUTING & INFORMATICS, KIBABII UNIVERSITY (KIBU): 5TH AUGUST 2019 - 9TH AUGUST 2019

Responsibilities Held:
- Ag. Dean School of Computing and Informatics (SCAI)
- Attend Deans Committee
- Coordinate the Selection for Admission of fully funded Masters programme in Information Technology (MSc. IT) courtesy of Inter-University Council for East Africa /German Development Bank (KFW) Scholarship from Tanzania, Burundi, South Sudan and Rwanda.

TUTORIAL FELLOW, COMPUTER SCIENCE DEPARTMENT, KIBABII UNIVERSITY (KIBU): AUG 2015 - TO MAY 2020

Research and Scholarship Responsibilities:
- Determine relevant research objectives and prepare research proposals for the department.
- Identify sources of funding and oversee the process of securing funds for the university to fund research.

- Carry out independent research and act as principal investigator and project leader in the research projects in the department.
- Write or contribute to publications or disseminate research findings using other appropriate media within and without the university.
- Act as a referee and contribute to peer assessment of other teaching and research staff within the university.
- To ensure that quality research is carried out
- Make presentations or exhibitions at national and international conferences and other similar events. To disseminate knowledge.

Learning and Teaching Responsibilities:
- Design, develop and deliver a range of programmes of study (sometimes for entirely new courses) at various levels within the university.
- Review course content and materials on a regular basis, updating when required within the departments to align them with market needs.
- Develop and apply innovative and appropriate teaching techniques and materials that create interest, understanding and enthusiasm amongst students in the university for effective learning and teaching.
- Transfer knowledge including practical skills, methods and techniques to students and other stakeholders in the university.
- Ensure that course design and delivery comply with the quality standards and regulations of the university and department.
- Supervise student projects, field trips and, where appropriate, industrial placements to equip students with on the job training and skills
- Set, mark and assess work and examinations and provide feedback to students. To test for competency among students and the level of knowledge acquired.
- Ensure that the teaching content and methods of delivery are in accordance with equal opportunities, and respond to issues relating to staff and student needs

Operational Responsibilities:
- Lead and develop external networks for example with external examiners and assessors from other universities.
- Understand and apply the principles of equality of opportunity in an academic context within and without the university by grading students fairly and accurately.
- Contribute to the development of teams and individuals through the appraisal system and providing advice on personal development of staff and students in the university. Act to resolve conflicts within and

between teams and individual students and staff in the university.

Teach, examine and conduct practical courses in computer science, supervise computer science/Information Technology projects for undergraduate and graduate students and participate in computer science/Information Technology workshops and seminars.

- Doctor of Philosophy in Information Technology
- Master of Science in Information Technology
- Bachelor of Science (Computer Science) courses
- Bachelor of Science (Information Technology) courses
- Bachelor of Education (Computer studies) courses

With a specialization in computer networks, data communications, information security, and Geographical Information Systems (GIS).

Membership on University, School, and Departmental Committees

Member of the University Adhoc Inspection Committee for ICT Hub Contracts – Kibabii University (6th April 2020)

Chairperson, School of Computing and Informatics (SCAI) welfare committee – Kibabii University.

Timetable Coordinator, Computer Science Department – Kibabii University.

Academic Advisor Computer Science (First year students) – Kibabii University.

Member of the University IPM Office and Innovation Committee – Kibabii University (19th July 2019)

Member of the University ICT Hub Infrastructure Committee – Kibabii University (15th April 2019)

Member of the University Marketing Committee – Kibabii University.

Organizing Secretary of the Kibabii University Academic Staff Benevolent Scheme Committee (KUASBS) (January 2020 – To Date).

PART TIME LECTURER, UNIVERSITY OF ELDORET: MAY 2015 - TO DATE

Teach, examine and conduct practical courses in computer science. With a specialization in computer networks, data communications, and information security.

- Bachelor of Science (Computer Science) courses
- Bachelor of Science (Information Technology) courses
- Bachelor of Science (Informatics) courses

ICT MAINTENANCE ENGINEER, MASINDE MULIRO UNIVERSITY OF SCIENCE & TECHNOLOGY (MMUST): APRIL 2010 - JULY 2015

1. Helpdesk and Desktop Administration; provide software and hardware troubleshooting, repair and maintenance as well as software user support to all members of staff on-site, carry out installation and the uninstallation of all software on all user ICT equipment, and manage helpdesk system as well as antivirus software application

2. Network Administration and communication management; deployment of network infrastructure such as cable trunking, switching and routing as well as troubleshooting of LAN/WAN connectivity issues, Perform ICT auditing, logging and monitoring for optimum performance, configure ASA firewalls to ensure security of the network, deploy Cisco technologies and manage VLAN, VPN, MPLS network environments.

3. System Administration; deployment and commissioning of new servers. Monitor the performance and reliability of network equipment, recommend replacement or modification of existing hardware and facilities, control physical security of data processing and storage facilities including standby and recovery procedures, plan and test back-up facilities in the event of computer equipment failure and coordinate the university's re-run procedures. Manage the AD platform, VLAN, VPN, MPLS

4. Strategy Development: Develop institutional ICT maintenance strategy in line with e-government standards related to ICT equipment maintenance, compute staff to computer ratio based on government and KENET ratios, design and implement maintenance schedules, develop, implement, and monitor performance contracting work plans, prepare procurement plan and financial budget for all ICT equipment yearly requisitions.

5. Technology Capacity Building: carry out training needs assessment to ICT staff and all University staff and facilitate trainings according to the ascertained requirements. This includes provision of technological advisory role to management with regard to the current technology to be deployed in the University.

6. Assets and Operations Management: Maintenance of the inventory of all IT assets and equipment, warranty status, and Service Level Agreements (SLAs) with service providers.

7. Develop, review, and implement policies: passwords, asset and operation management, incident management, ICT resources access, and e-waste management.

8. Service Procurement; guide procurement with the necessary technical

(hardware and software) acquisition specifications during purchase of ICT equipment according to standards and least cost in keeping with rules and regulations and to ascertain that the correct services have been rendered in a timely manner. Member of the University Procurement, Disposal, and Tender

Committees.

NETWORK DESIGN ASSISTANT, IGYTECH COMPUTER SYSTEMS: AUG 2007 - JAN 2010

1. Network Administration: Network administration and management including backup, internet access, and application support to the esteemed customers in the field.
2. Design: Design and implementation of customer routing and switching of network infrastructure.
3. Customer Services: Tuning up of new customer VPN peering sessions as well as debugging MST, VLAN and IGP convergence problems.
4. Escalations: Handle all escalated customer issues (customer service requests) during implementation in a bid to provide quick issues resolution in a timely manner.
5. Process Development & Systems Improvement: Develop all project management process documentation that governs execution of projects from conception to completion i.e. work flow charts. The role includes recommending improvement of relevant systems.
6. Project Implementation: Ensure projects are delivered within agreed timelines in a bid to meet the organization annual target. This includes providing weekly and monthly reports.

TRAINING EXPERIENCE

MASINDE MULIRO UNIVERSITY (MMUST): 2013 - 2015

Industrial Training: Teaching, examining and conducting practical courses in Systems/ Network Administration, systems repair and maintenance.

KIBABII UNIVERSITY COLLEGE (KIBUCO): 2014

Area of specialization: Computer Networks, Data Communications, Information Security.

Industrial Training: Teaching, examining and conducting practical courses in Systems & Network Administration.

PUBLICATIONS

2018

Barasa, S., Mbugua, S., & Karume, S. (2018). An Optimized Model for Transition from IPv4 to IPv6 Networks in a Cloud Computing Environment, *International*

Journal of Computer Networks and Communications Security (IJCNCS), Vol. 6, Issue 8, ISSN: 2410-0595, pp. 182 - 195 Paper Link: http://www.ijcncs.org/published/volume6/issue8/p3_6-8.pdf.

Barasa, S., Mbugua, S., & Karume, S. (2018). Map of the Various Configuration Attributes from IPv4 to IPv6 Networks for Dual Stack, 6to4 Tunneling and NAT Modelling Designs in OPNET Modeler, International Journal of Computer Science and Mobile Computing (IJCSMC), Vol. 7, Issue 7, ISSN: 2320–088X, pp. 32 - 44, Paper Link: http://ijcsmc.com/docs/papers/July2018/V717201806.pdf.

Etene, Y. & **Barasa, S.** (2018). Integration of Social Media Technologies for Teaching and Learning in Kenyan Schools, International Journal of Research in Information Technology (IJRIT), Vol. 2, Issue 1, ISSN: 2001 - 5569, pp. 1 - 7. http://ijrit.net/papers/January2018/V2I101.pdf

2017

Barasa, S., Kimia, J., & Motochi, V. (2017). Exploring emerging technologies and their impact to information management and organization growth, International Journal of Advanced Research in Computer Engineering & Technology, (IJARCET), ISSN: 2278 - 1323, Vol. 6, Issue 7, pp. 1109 - 1112, http://ijarcet.org/wp-content/uploads/IJARCET-VOL-6-ISSUE-7-1109-1112.pdf.

Barasa, S., Barasa, P., & Motochi, V. (2017). Trends in Green Computing Paradigms towards Environment, Eco Friendly Technology and Future Sustainable Kenya International Journal for Research & Development in Technology (IJRDT) ISSN: 2349-3585, Vol. 8, Issue 1, pp. 381 - 387, http://ijrdt.org/full_paper/24315/18/Trends-in-Green-Computing-Paradigms-towards-Environment-Eco-Friendly-Technology-and-Future-Sustainable-Kenya.

Motochi, V., **Barasa, S.**, Owoche, P., & Wabwoba, F. (2017). The Role of Virtualization towards Green Computing and Environmental Sustainability, International Journal of Advanced Research in Computer Engineering & Technology (IJARCET), Vol. 6, Issue 6, ISSN: 2278 - 1323, pp. 851 - 858, http://ijarcet.org/wp-content/uploads/IJARCET-VOL-6-ISSUE-6-851-858.pdf.

Barasa, S. & Motochi, V. (2017). Implementation and Performance Evaluation of 6to4 Manual Tunneling and Dual Stack IPv4/IPv6 Network Simulation Model for GNS3 and JPerf, International Journal of Research in Information Technology (IJRIT), Vol. 1, Issue 2, 2001 - 5569, pp. 21 - 36, Paper Link: http://ijrit.net/papers/December2017/V1I202.pdf.

Barasa, S., Mbugua, S., & Karume, S. (2017). A survey of Transition Mechanisms

and Models for Transiting from IPv4 to IPv6 Networks, International Journal of Research in Information Technology (IJRIT), Vol. 1, Issue 2, ISSN: 2001 - 5569, pp. 1 - 20, Paper Link: http://ijrit.net/papers/December2017/V1I201.pdf.

2016

Barasa, S., Barasa, P., Motochi, V., & Wabwoba, F. (2016). Global Information Technology Infrastructure in Addressing the Borderless Problem of Overpopulation, Journal of Computer (JoC), ISSN: 2518 - 6205, Vol. 1, Issue 4, pp. 7 - 19, http://www.journal.computer/Publications/October2016/V1I403.pdf.

SUPERVISION OF POSTGRADUATE WORK	**DOCTOR OF PHILOSOPHY DEGREE** 1. Designing Requirement Elicitation Architecture for Blockchain Technologies; To Improve the Agricultural Value Chain in Kenya, By Kevin Mayaka (Ongoing) **MASTERS DEGREE** 2. Network Congestion Control Framework in A Learning Institution to Enhance Its Stability, By Inzaule Daniel Navuvia (Ongoing). 3. Evaluating Information Technology Practices and Security in Digitization of Basic Education Program in Kenya, By Antony Odhiambo Okeyo (Ongoing).
RESEARCH & CONSULTANCY AWARDS	**COUNTY GOVERNMENT OF BUNGOMA** Deputy Lead Consultant for Resource Mapping of Bungoma County Government, Kenya (2015) Ministry of Trade, Land Urban/Physical Planning, Energy and Industrialization **MATERNAL AND NEWBORN HEALTH IMPROVEMENT (MANI) KENYA** IT Lead Consultant for MANI KENYA Project Office located in Bungoma County, Kenya (January 4th - 26th 2016) **MATERNAL AND NEWBORN HEALTH IMPROVEMENT (MANI) KENYA** IT Support Consultant for MANI KENYA Project Office located in Bungoma County, Kenya (April 1st 2016 - June 30th 2017)
CONFERENCES, WORKSHOPS, & SEMINARS	**CONFERENCES** Barasa, S., W., Wechuli, A., N., & Barasa, P., W. (2018). The use of Internet of Things to combat the global challenge of terrorism. The 3rd Kibabii University International Conference. Theme: Creativity and Innovation for Sustainable Development. 12th - 14th June, 2018 at Kibabii University. **SEMINARS** Research Methodology for Social Scientists organized by the Faculty of

Education and Social Sciences (FESS) at Masinde Muliro University of Science and Technology (MMUST) on 9th - 22nd July 2014.

Fundamentals of Web Applications organized by the Directorate of Information and Communication (ICT) Masinde Muliro University of Science and Technology (MMUST) on 18th - 19th May 2010.

WORKSHOPS

Digital Content Development workshop organized by Kibabii University Directorate of Open Distance and E-Learning (ODEL) in conjunction with School of Computing and Informatics (SCAI) Facilitated by Captiva International Limited held at Joventure Hotel Kisumu, 22nd April to 26th April, 2019.

Oracle Java Programming Refresher course organized by the School of Computing & Informatics (SCAI), Kibabii University on 18th - 22nd May 2016 by Oracle Academy.

Corruption Prevention Training workshop by the Ethics and Anti-Corruption Commission (EACC) held on 21st - 22nd 2015 at Kibabii University.

The second Workshop on Emerging ICT Technologies held at Masinde Muliro University of Science and Technology in March 2013.

Disability Mainstreaming at Masinde Muliro University of Science and Technology (MMUST) on 1st - 2nd March 2012.

CURRICULUM REVIEW & DEVELOPMENT	**KIBABII UNIVERSITY** Master of Science in Computer Science curriculum development, November 2019 Master of Science in Digital Security and Forensics curriculum development, June 2019 Review of the Bachelor of Science in Computer Science curriculum, September 2016
RESEARCH GRANTS/FUNDS	**NATIONAL RESEARCH FUNDS (NRF) – KSHS. 64.6 MILLION AWARD (2016/17)** Part of the technical member team for institutions infrastructure support by National Research Fund (NRF) - Kibabii University Information and Communication Technology Hub (KICTH) for the setup and implementation of a Data centre, Computer forensics laboratory, E-Learning and Video conferencing, Mobile computing laboratory, Professional certification Preparation laboratory, and Incubation centre. **NATIONAL COUNCIL FOR SCIENCE & TECHNOLOGY (NACOSTI) – KSHS. 600, 000.00**

(2016)

Granted research funds for my PhD Study. Research Title: Optimized Transition Output from IPv4 to IPv6 Networks.

PROFESSIONAL MEMBERSHIP	The Computer Society of Kenya, Member Number: 121348 Association of Computing Machinery (ACM), Member Number: 4550545

SKILLS

Comprehensive knowledge in computer networks, system security, programming languages and software applications. Excellent knowledge and experience in:

- Cisco Systems
- IBM Cloud Application Development
- Database Management Systems (MySQL, Actuate)
- Web Design and Programming
- OPNET Modeller Simulator
- JPerf, NetPerf

COMMUNITY SERVICE

February 2019 – To Date: Member of Board of Management: Friends Secondary School, Chekulo.

2004/05 Rotary Club Student Recognition Certificate - Kakamega Chapter

LANGUAGE PROFICIENCY

English, Kiswahili and Luhya

REFEREES

PROF. FRANKLIN WABWOBA

Associate Professor, Department of Information Technology, Kibabii University;

P.O. Box 1699 - 50200 Bungoma, Kenya;

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PROF. SAMUEL MBUGUAH

Associate Professor, Department of Information Technology, Kibabii University;

P.O. Box 1699 - 50200 Bungoma, Kenya;

Tel: 0717176356/0733892383

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PROF. CYRUS WEKESA

Associate Professor, Department of Electrical and Electronics, University of Eldoret;

P.O Box 30197 - 00100, Nairobi, Kenya;

Tel: 0720888809

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