THE TECHNICAL UNIVERSITY OF KENYA

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Faculty:	Applied Sciences and Technology
School:	HEALTH AND BIOMEDICAL SCIENCES
Department:	Pharmaceutical Sciences and Technology
Current Designation:	Lecturer, DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING (DEEE)
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Consultation Hours:	8AM-5PM MON - FRI

EDUCATION

LEVEL	QUALIFICATION NAME	INSTITUTION	YEAR
Doctor of Philosophy (PhD)	ELECTRONIC ENGINEERING	UNIVERSITY OF KWAZULU-NATAL(South Africa)	2019
Masters of Science (M.Sc.)	Electronic Engineering (Telecommunications)	University of KwaZulu-Natal(South Africa)	2016
Bachelor of Science (BSc)	Computing and Information Systems	University of London(United Kingdom)	2014
Bachelor of Science (BSc)	BPHIL IN TECHNOLOGY(ELECTRICAL &ELECTRONIC ENGINEERING)	University of Nairobi(Kenya)	2012
Higher Diploma	DIPLOMA IN ELECTRICAL &ELECTRONIC ENG.	KENYA POLYTECHNIC(Kenya)	2004
Diploma	TECHNICAL EDUCATION	KENYA TECHNICAL TEACHERS COLLEGE(Kenya)	2006
Diploma	DIPLOMA IN ELECTRICAL &ELECTRONIC ENG.	KENYA INSTITUTE OF MASS COMMUNICATION(Kenya)	1993
Certificate	INFORMATION TECHNOLOGY	KENYA POLYTECHNIC(Kenya)	1998
O level/Equivalent	KENYA CERTIFICATE OF SECONDARY EDUCTION	NASOKOL GIRLS SEC SCHOOL(Kenya)	1989
KCPE/Equivalent	KENYA CERTIFICATE OF PRIMARY EDUCATION	MAKUTANO PRIMARY SCHOOL(Kenya)	1985

WORK EXPERIENCE

PERIOD	INSTITUTION	POSITION
24/7/2014 - TO DATE	kenya polytechnic	TECHNOLOGIST
01/03/1995 - 01/07/2009	kenya polytechnic	SNR TECHNICIAN

GENERAL STATEMENT ON RESEARCH AREAS

I am currently focused earth-satellite communication link performance in addition to Wireless Communication, Machine learning and automation

CURRENT RESEARCH PROJECTS

TUKSat-1 Mission for Vessel Tracking and Rescue Operations in Lake Victoria	Nanosatellite technology

SELECTED PUBLICATIONS

TITLE	LINK TO PUBLICATION	YEAR
Specific Rain Attenuation Dependence on Rain Storm Magnitudes and Measured Drop Sizes	View online	2018
Fade Slope Prediction Model for rain storms over Sub-tropical Africa	View online	2019
Fusion Based MR Images Denoising Technique Using Frequency Domain and Non-Local Means Filters	View online	2022
Solar-Powered Shunt Active Power Filter Using an Advanced Inverter Topology ZSI: A Review	View online	2023
Outage Prediction during Intense Rainstorm Events Using Queuing Theory and Markov Chains over Radio Links	View online	2018
Real-time Transformer Vandalism Detection by Application of Tuned Hyper Parameter Deep Learning Model	View online	2022
30-Second and One-Minute Rainfall Rate Modelling and Conversion for Millimetric Wave Propagation in South Africa	View online	2016
Pylon Anti-Vandalism Monitoring System using Machine Learning Approach	View online	2020
Rain Attenuation Prediction Using Artificial Neural Network for Dynamic Rain Fade Mitigation	View online	2019
Rain Attenuation Prediction Using Artificial Neural Network for Dynamic Rain Fade Mitigation	View online	2019
CNN Real-Time Detection of Vandalism Using a Hybrid -LSTM Deep Learning Neural Networks	View online	2021
Effects of Storm Attenuation Over Satellite Links in Sub-Tropical Africa	View online	2018
Rainfall Rate Prediction based on Artificial Neural Networks For Rain Fade Mitigation over Earth Satellite link	View online	2019

POSTGRADUATE STUDENTS SUPERVISION

NAME	PROJECT TITLE	PERIOD
Christian Rudahunga	MRI	January 2020-December 2022
T. N.	ML Related	Sept 2021-Dec 2023
T. N.	ML Related	Sept 2021-Dec 2023

COURSES TAUGHT

NAME	DESCRIPTION	PERIOD
Robotics & Cybernetics	Geared towards design and implementation of automated control systems	January 2016 - April 2016
Satellite and Mobile Communications	Wireless communication technologies and standards	Sept 2019 - TO-DATE
Digital Filter Design	Digital signals and systems with focus on the the design of digital filters	Sept 2019 - TO-DATE
Microprocessor Systems	Microprocessors and their interfaces to memory and I/O devices	Sept 2019 - TO-DATE
Telecommunication and the Internet	Wireless communication and the internet	Jan 2020 - TO-DATE
Automated Process Control Systems	Includes controllers, online measurement systems, SCADA systems and Robotics	Jan 2020 - TO-DATE
Optical Communication	Transmission of signals using light	Sept 2020 - TO-DATE
Wireless Communication and Networking	Signal transmission via electromagnetic waves	Sept 2020 - TO-DATE
Microprocessor Architecture and Interfacing	Programming, hardware design, Memory and IO interfacing, Interrupts	Jan 2020 - TO-DATE
Comptuter Programming	C++ Programming	Jan 2020 - TO-DATE
Artificial Intelligence and Expert Systems	Exposes students on emerging technologies in AI	January 2021 - TO-DATE
Artificial Neural Networks	A subset of Artificial Intelligence	January 2021 - TO-DATE
Satellite Communication	Involves technologies used to launch satellites in orbits and how satellites communicate with earth stations and also with each other.	September 2021 - December 2021

PROFESSIONAL AFFILIATIONS AND SOCIETIES

TITLE	INSTITUTION
Member	IEEE-HKN, UKZN Chapter
Member	South African Institute of Electrical Engineers
Member	IEEE
Member	IEEE Women in Engineering