## WEDNESDAY January 15, 2020

## **COLLEGE OF BUSINESS AND MANAGEMENT SCIENCES**

The Principal College of Business and Management Sciences to present the following for the conferment of the

### **Degree of Doctor of Philosophy**



MANIRAGABA Fred

#### Determinants of quality of life of older persons in rural Uganda

Mr. Fred Maniragaba investigated the determinants of quality of life of older persons in rural Uganda. In this study, quality of life focused on physical health, intimacy, and social participation dimensions. The findings show that more than 3 in 10 older persons had low scores on social participation, intimacy and physical health. Overall, 4 in every 10 older persons had poor quality of life. The distribution of poor quality of life varied by sex, wealth status, region of residence, education, engagement in physical activity and HIV sero-status. The study prevention interventions such as safe sex education, embrace active ageing; and educated ones should be encouraged to participate in community social engagements. This study was funded by Makerere University and Consortium for Advanced Research and Training in Africa (CARTA). It was supervised by Dr. Betty Kwagala and Professor James Ntozi.

Conferment of the Degree of Doctor of Philosophy



**TURYAREEBA Dickson** 

### The Augmented Solow Growth Model, Total Factor Productivity Growth and the Cross-Country Income Growth Disparities in Africa

Mr. Turyareeba Dickson's study was purposely to make a scholarly contribution to the growth accounting debate on the relative importance of factor accumulation and total factor productivity growth in explaining cross-country differences in income growth in Africa. His study found that differences in both factor accumulation and total factor productivity growth can explain the cross-country differences in income growth in Africa. His study results however showed that differences in factor accumulation played a more important role than differences total factor productivity growth in explaining growth disparities in Africa and in the clusters. Mr. Turyareeba Dickson's study revealed that to spur more economic growth in Africa, there is the need for governments to design policies that boost gross capital formation; earmark extra resources for human capital development and for increased investment in ICT infrastructure; create incentives for credit expansion to the private sector and devise stronger policies against inflation. To foster economic growth in Sub-Saharan Africa, results showed that governments need to increase investments in ICT infrastructure, implement outward-looking development strategies, expand credit to the private sector and implement population growth control measures. The study was self-funded and supervised by Associate Professors: Eseza Kateregga and Elia Hisali.

# **COLLEGE OF COMPUTING AND INFORMATION SCIENCES**

The Principal College of Computing and Information Sciences to present the following for the conferment of the

### **Degree of Doctor of Philosophy**



### **ADUWO Jennifer Rose (Ms)**

# A Machine Learning Model for Automatic Field Based Classification of Cassava Mosaic Disease and its Severity

Ms. ADUWO Jennifer Rose investigated how machine learning can be used for detection of cassava mosaic disease (CMD) and its severity using field based cassava leaf images. The study employed an experimental design. A total of 340 healthy and 313 CMD infected cassava leaf images were collected from National Crops Resources Research Institute (NaCRRI), Uganda for the experiments. The developed machine learning Artificial Neural Network model provided accuracy rate of 97.2% for CMD classification and 88% for CMD severity grading. Within the model, CMD classification including its severity could be implemented on a mobile phone. In terms of policy, NaCRRI could spearhead the development of a policy on integration of machine learning in CMD management and engagement of Agricultural Extension Workers to detect CMD and its severity using the developed model. This study was self-funded and supervised by Dr. Joyce Nakatumba Nabende and Dr. Ernest Mwebaze.

### **Conferment of**

### **Degree of Doctor of Philosophy**



KABURU Dennis Mugambi

#### An adjustable usable security approach for a continuous user authentication scheme

Mr. KABURU Dennis research developed an adjustable usable security approach that enhances the alignment of security and usability attributes to achieve a better interaction in continuous user authentication schemes. He established that software developers have neglected the effect of the authentication approaches on the cognitive processes of a user, resulting into not user-friendly systems. Through experiments, the resultant approach showed a threshold that adjusts user interactions at different times and a technique that quantitatively recommends combinations that minimize the cognitive load and usability deficiency. Software developers can use this approach as a platform that enables their reasoning of how their use of authentication mechanisms affects end user efficiency and make refined decisions that improve usability of user interactions in a continuous authentication scheme. This study was funded by METEGA, and was supervised by Dr. Julianne Sansa–Otim and Dr. Tony Bulega.

### **Conferment of the Degree of Doctor of Philosophy**



### **MASABO Emmanuel**

# Integrated feature engineering approach for classification and detection of polymorphic malware using machine learning

Mr. MASABO Emmanuel's research focused on the security of computer systems, by investigating the challenges related to the eradication of malware. The study showed that poor detection of current malware by existing technologies is due to polymorphism in today's malware, which enables them to disguise themselves by creating infinite number of new variants of themselves in order to evade detection systems. This study developed a new machine learning approach to effectively address the aforementioned problem. The findings showed improved performance both in terms of classification and detection of polymorphic malware. This study was funded by Metega, and was supervised by Dr. Kyanda Swaib Kaawaase and Dr. Julianne Sansa Otim.

### Conferment of the Degree of Doctor of Philosophy



### NAKIBUULE Rose (Ms)

#### Traffic flow speed and congestion monitoring in resource-constrained crowded cities

Ms. NAKIBUULE Rose's study was to develop a low cost collection tool and computer vision based computation models for monitoring traffic flow speed and congestion levels of unstructured traffic flow found in resource-constrained crowded cities. Current computer vision methods tailored for traffic flow speed and congestion monitoring are costly and computationally expensive. The study revealed that by assembling a set of off-the-shelf hardware components and programming smartphone cameras as automatic image sensors reduce data acquisition costs by 80% as compared to conventional closed circuit televisions (CCTVs). The study developed a tool for real-time traffic flow monitoring and data acquisition. This study was funded by NUFFIC, DAAD, and College of Computing and Information Sciences, and was supervised by Dr. John Alexander Quinn, Dr. Ernest Mwebaze and Dr. Joyce Nakatumba-Nabende

# Conferment of the Degree of Doctor of Philosophy



NINA Olivia (Ms)

# Indigenous knowledge utilization strategies for HIV prevention in Uganda: a study of secondary school adolescents, Kampala District

Ms. NINA Olivia investigated approaches for enhancing use of Indigenous Knowledge (IK) in the context of Human Immunodeficiency Virus (HIV) prevention among adolescents. Prevention programs that blended biomedical and IK were known to be more successful than those that did not. With increasing HIV infections among adolescents, promoting combination of approaches was critical to increasing access to accurate comprehensive information. However, existing national guidelines on use of IK were limited, fragmented and their implementation was not yet clear. The study revealed that the IK information being used contained misinformation. Ties between IK sources and adolescents were too weak to support IK use. The study recommended development of a specific national IK school health policy. Synergies between indigenous information sources and adolescents needed to be strengthened and documented IK integrated into existing HIV prevention information. This study was self-sponsored, and was supervised by Assoc. Prof. Ruth Nalumaga and Prof. Robert Ikoja-Odongo.

### **Conferment of the Degree of Doctor of Philosophy**



### **OMODA-ONYAIT Godfrey**

## A model for personalizing learning in an E-learning System

Mr. OMODA-ONYAIT Godfrey's research investigated the requirements for personalizing learning in an e-learning system to address the issue of learner diversity and changing learner needs. A survey was conducted to gather requirements for the model using questionnaires and interviews. The findings were used to develop the model. Model evaluation was done using experts, and prototyping; and the model was found suitable. The following factors were established for determining personalized learning: learner commitment; learner motivation; learner engagement; and learner experience. From a practical point of view, the results provided a generic model that can help practitioners and policy makers in personalizing and implementing learning in an e-learning system, hence addressing learner diversity and their changing needs. This study was self-funded, and was supervised by Prof. Jude T. Lubega and Assoc. Prof. Gilbert Mayiga.

# COLLEGE OF VETERINARY MEDICINE, ANIMAL RESOURCES AND BIO-SECURITY

The Principal College of Veterinary Medicine, Animal Resources and Bio-security to present the following for the conferment of the

**Degree of Doctor of Philosophy** 



### YAJJ Nuol Aywel Madut

## Brucellosis at human-domestic animal interface in Greater Bahr el Ghazal States, South Sudan

Mr YAJJ Nuol Aywel Madut assessed the prevalence of brucellosis among humans and domestic animals in pastoral settings in post-conflict Greater Bahr el Ghazal States, South Sudan. Brucellosis prevalence was high both in human and animals due to the lack of control measures and awareness and the disease was common among febrile patients attending out patient department (OPD) in Wau Hospital. The consumption of infected animal products played a major role in transmission of brucellosis. Age, herd size, lactation, health status, hygroma and history of abortion were factors associated with the infection. There is need for mandatory routine testing for brucellosis among herders and other high-risk groups, and control should be accomplished at the animal level since people have a social and cultural tendency to consume raw animal products. This study was funded by NORHED and was supervised by Assoc. Prof. George William Nasinyama and Assoc. Prof. Clovice Kankya.