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Digital Transformation of Africa: An Opportunity for Impactful Research and Education

Abstract

The fourth industrial revolution is seen as Africa's revolution with huge projected economic growth over the next five years, mostly driven by digital technologies. At the same time, digital implementation capacity (i.e., institutions, experts, processes, and tools) is still low and expensive in Africa and the cybersecurity capacity and adequate solutions necessary for a successful digital transformation is drastically lacking. Although this situation is not the most desirable one, it opens many research opportunities for African researchers. The CyLab-Africa and Upanzi Digital Public Goods Network (UDPGN) initiatives are collaboration between CMU's CyLab and CMU-Africa and aim to address Africa's unique and fragile digital environment with the creation of a networked platform as a center for digital technologies (e.g., identity, payments, cybersecurity, cloud computing, AI/ML applications) focused on creating, testing, innovating and helping implement and experiment with digital technologies.

In this talk, I will discuss some of the research projects started at CyLab-Africa/Upanzi Network to address some of the most pressing issues facing the digital transformation of the continent.

Biography

Dr. Assane Gueye is an Assistant Teaching Professor at Carnegie Mellon University Africa since August 2020. He is the co-Director of the CyLab-Africa initiative and Director of the Upanzi Digital Public Goods Network. Dr. Gueye also holds a Guest Researcher position with the National Institute for Standards and Technology, Gaithersburg, USA. He previously was a faculty member at the ICT Department at the University Alioune Diop of Bambey, Senegal, where he also led the research group "Technologies de l'Information et de la Communication pour le Développement" (TIC4Dev). Assane completed his PhD in Electrical Engineering and Computer Sciences from UC Berkeley in March 2011. He previously received a master's degree in communication systems engineering from Ecole Polytechnique Fédérale de Lausanne, Switzerland. His research interest focuses in two main areas: performance evaluation and security of large-scale communication systems, and information and communication technologies for development (ICT4D). Assane is a Fellow of the Next Einstein Forum (Class of 2016). In 2019 he was nominated as a member of the European Alliance for Innovation (EAI) inaugural Fellow Class.