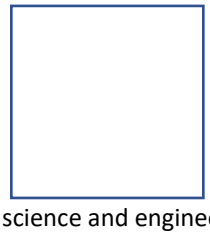
## Panel Discussion AI-enabled THz communications

This panel discussion will focus on the integration of artificial intelligence in emerging communication technologies such as 5G, 6G, and Terahertz (THz) in extreme environments. In contrast to commercial wireless networks (5G included), which are optimized for best-effort broadband voice and Internet of Things (IoT) services, the goal of THz wireless communications in an extreme environment is to support machine-to-machine communications for mission-critical applications with ultra-high reliability and low latency. These THz/6G wireless technologies promise capabilities up to 1Tbps data rates (1,000x improvement), ultra-dense massive connectivity (1,000,000 devices/$m^3$), and ultra-reliable (0.9999999) with latency in sub-milliseconds. With 6G/THz capabilities make use of related technologies such as Visible Light Communications (VLC- both quantum and co[illegible]tional), intelligent reflecting surfaces, and nano-scale communications (both electromagnetic and mo[illegible]ular). A few of these new capabilities include Terabit/sec data rates, massive Machine-Type Communications (mMTC), Ultra-Reliable Low Latency Communications (URLLC), and related technologies including AI, IoT, Industry 4.0/5.0, and digital twins. Applications enabled by these emerging communication technologi[illegible]nclude h[illegible]raphic telepresence, Augmented Reality (AR), Virtual Reality (VR), Digital Twins (DT), industr[illegible]4.0/[illegible] mobile r[illegible]cs, and machine-to-machine communications.



**Dr. Thomas Ndousse** is the Director of R&[illegible] High-Per[illegible]nance Supercomputing and communication systems in the Advanced Scie[illegible]C[illegible]puting Research Office at the USA Department of Energy (DOE). Notable achievem[illegible]there included the initiation of Quantum computing and communicati[illegible]networks program, [illegible]ireless communications for industry 5.0, application software sta[illegible]Exascale supercomp[illegible]systems, and heterogeneous architectures for complex mu[illegible]-ph[illegible]roblems. Dr. Nd[illegible]se was a professor of computer science and engineering at George Washington Uni[illegible]rsity, W[illegible]tate Univ[illegible]rsity, and Northern Arizona University. He is currently a visiting professor at the L[illegible]dan Ki[illegible]ath[illegible]ty in Kenya. His formal education includes a B.Sc. Electrical Engineering, University of Te[illegible]982, M.Sc. [illegible]mputer Science, New Mexico Institute of Mining and Technology-1984, a[illegible]mputer Scie[illegible], George Mason University-1990.

## Panel Discussion – II – AI & Ethics

A[illegible]ntelligence (AI) h[illegible]merged as a technology of considerable interest in many countries with develo[illegible]and emerging e[illegible]omies. It has led to the emergence of machines performing tasks that normally require h[illegible]intelligence, raising some fundamental ethical, moral, and existential questions. it also puts into question the[illegible]definitio[illegible]of whom we call humans that are responsible for conceiving, developing, and deploying these thin[illegible]machines. The intelligence corpus itself is a highly controversial subject. Like modern science, it can be racial[illegible]and exploited to justify the continuous propagation of racism, neo-colonialization, imperialism, and eugen[illegible]s. The victims of this misuse of AI would likely be subgroups such as the indigenous communities, minority populations in the developed world, and in general the global south. The objective of the roundtable discussions is to explore the impacts of AI technologies on the African continent - that is on its culture, traditions, emerging economy, geo-politics, trade policies, and decolonization processes. The panel will discuss the above issues in the context of the following but not limited to the following issues:

- Parachuting AI systems into Africa (Parachute Science & development)
- Ethics in Machine Learning (ML) and data collection and provenance
- Biases in machine learning algorithms and taring data sets
- Dangers of AI a modern tool for recolonization, racialization, and automation racism,
- AI systems ethics validation, verification, compliance
- Racism and biases in AI systems

- Cultural Knowledge encoding in AI
- Machine learning algorithms' biases
- Data sovereignty vs the "Osaka Track"
- MAAT ethics in AI development
- Ubuntu ethics in AI development
- AI whiteness
- Machine learning radicalization and racialization

Contributions in the form of presentation of a position paper, serving in the panel, or giving an invited talk are welcomed. All contributions to participate should be sent be submitted to the general conference chair:

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## Panel Discussion III – Blockchain Technologies

Blockchain, first created to enable cryptocurrency, has emerged as the next revolutionary technology with the potential to transform entire industries from banking and financial services to telecommunications and manufacturing, to name but a few. The rapid expansion of crypto markets and the corresponding values that they represent are also slowly challenging the mainstream perceptions of investment markets. Blockchain technology's potential goes far beyond cryptocurrencies. Blockchain offers public or private distributed ledgers to record an immutable timestamped public record that can be independently verified by any participant. Bitcoin and its peers have mostly remained on the fringes of finance and payments, yet some countries are actively considering granting crypto-assets legal tender status, and even making these a second (or potentially only) national currency. The goal of this roundtable is to provide a forum for researchers, academicians, industry experts, and policymakers to discuss the potential impact of this emerging technology on Africa's economy, development, and monetary policy. Possible contributions in the form of panel discussions, presentations, and tutorials are solicited and should include but are not limited to the following:

- Crypto-currency software engineering
- Survey of crypto-currency applications in Africa
- Smart contracts in private micro-financing, such as tontine
- Blockchain technologies in Web applications
- Ledger interchange formats and protocols
- Smart contracts and conditional execution contexts
- *Blockchain applications* in Identity systems, including privacy, security, and confidentiality
- Communication networks and protocols technologies to support Blockchain applications
- Cryptocurrency for unbanked communities--People with little to no access to a solid banking infrastructure can access various financial services for free.
- Cryptocurrencies features to fight hyperinflation in emerging economies and help people retain their capital while keeping it in a liquid or transferable form.
- Using cryptocurrency Blockchain as a mechanism to implement transparency and disclosures in digitized documents to deter corruption.
- Cryptocurrency for secure voting

All contributions to participate as a panelist or position papers presenter should be sent directly be submitted to the general co-chair: