# Pan-African AI & Smart Systems Conference

### December 4-7, 2024. Kwa-Zulu University, South Arica

- - -

# Panel Discussions
## Call for Participation

- - -

## Important Dates

- October 30, 2024:        Panel Participation intends to email
- November 20, 2024:       Presentation Title Submission
- November 30, 2024:       Panel Agenda - Presentation Slides

## Panel Participation Intent Submissions

Potential participants in any of the panels below are being solicited to submit a request to contribute to the panel discussion. Your panel participation request submission in the form of an email indicating the following:

a. Name;
b. Contact email:
c. Title of the Panel
d. Title of your presentation

Should be submitted to the following Address:  Attention: Dr. Thomas Ndousse, paaiss-Panel@Paaiss.com

## Panel Descriptions and Topics

The following panel discussions on important topics have been proposed to facilitate and promote the exchange of ideas on issues related to the conference theme. Potential conference attendees in the capacity of industry insiders, thought leaders, innovators, and technology experts with extensive experience and vision in these areas are invited to serve as presenters on these panels. As a panelist, you will be allotted 10-15 minutes for presentation and Q&A during the panel.

## A. AI in Finance Panel

The "AI in Finance" panel discussion seeks to explore the multifaceted impact of artificial intelligence on the financial sector. As AI technologies continue to evolve, they are increasingly being integrated into various financial services, driving innovation and transforming traditional processes. This discussion will bring together industry experts, technologists, academics, and regulators to delve into the latest advancements, challenges, and future directions of AI in finance. This panel discussion will offer a comprehensive overview of AI's role in finance, sharing best practices and inspiring ideas for future innovations. Attendees will gain valuable insights into the transformative power of AI technologies, the ethical and

regulatory landscapes, and the future directions of AI in the financial industry. Potential topics of discussion will include but are not limited to the following:

1. AI in Financial Security and Risk Management:
- AI-Powered Fraud Detection and Prevention
- AI in Credit Scoring and Lending
- AI for Regulatory Compliance
- AI and Financial Market Regulation

2. AI-Driven Trading and Investment:
- Algorithmic Trading and AI-Driven Investment Strategies
- Robo-Advisors and Automated Financial Planning
- Predictive Analytics for Financial Forecasting
- AI-Driven ESG (Environmental, Social, and Governance) Investing

3. AI in Customer Experience and Personalization:
- Customer Service Automation with AI
- AI and Personalized Financial Services

4. AI in Market Analysis and Insights:
- Natural Language Processing (NLP) in Financial Markets
- Blockchain and AI Integration

5. Financial Inclusion and Accessibility
- Financial Inclusion through AI

6. Ethical and Governance Considerations:
- AI Ethics and Governance in Finance

## B. AI-enabled 6G and THz communications Panel

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 conventional), intelligent reflecting surfaces, and nano-scale communications (both electromagnetic and molecular). 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 technologies include holographic telepresence, Augmented Reality (AR), Virtual Reality (VR), Digital Twins (DT), industry 4.0/50, mobile robotics, and machine-to-machine communications.

## C. AI, Ethics, and Endogenous Values Panel

Artificial intelligence (AI) has emerged as a technology of considerable interest in many countries with developed and emerging economies. It has led to the emergence of machines performing tasks that normally require human intelligence, raising some fundamental ethical, moral, and existential questions. It also puts into question the very definition of whom we call humans that are responsible for conceiving, developing, and deploying these thinking machines. The intelligence corpus itself is a highly controversial subject. Like modern science, it can be racialized and exploited to justify the continuous propagation of racism, neo-colonialization, imperialism, and eugenics. 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
- Data sovereignty and OSAKA track for the emerging digital economies
- Biases in machine learning algorithms, data collection, and algorithms
- Dangers of AI as a modern tool for recolonization, racialization, and automation of racism,
- National AI systems policies, regulations, laws, and compliance in transborder economic activities

- Data Sovereignty vs the "Osaka Track"
- African context; embedding MAAT, Ubuntu, and other African cultural values into systems ethics
- Digital divide and AI divide convergence; solution or a problem

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


## D. Blockchain Technologies Panel

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 feature 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


## E. Navigating Career paths in AI, Communications, Computing and Smart Systems

Embarking on a career in the dynamic fields of AI, Communications, Computing, and Smart Systems presents unique opportunities and challenges. This panel discussion aims to provide comprehensive insights and practical advice for students and professionals at various stages of their careers. From the challenges of being a graduate student to navigating the crossroads of academia versus industry, this session will cover essential aspects of career development in these cutting-edge domains. Attendees will gain valuable knowledge on the technical qualifications and soft skills required, effective strategies for job interviews, and tips for starting a professional career in the engineering industry, including the decision between entrepreneurship and traditional employment. Additionally, the panel will delve into the complexities of academic career development, balancing teaching, research, and service responsibilities, navigating the world of academic publishing, securing funding, networking effectively, and promoting equity, diversity, and inclusion in academia. Discussion topics will include but are not limited to:

- Challenges of a graduate student
- Career Path: Academia vs. Industry
- Technical qualifications and Soft Skills
- Job Interviews (Academia and Industry)
- Starting a Professional Career in Engineering Industry
    - Entrepreneurship versus employment
    - Transition from university to workplace (First five years)
    - Working in a Different Area than One's Major
    - Any Tips and Tricks

- Academic Career Development and Professional Services
  - Balancing teaching, research, and service responsibilities
  - Academic publishing (Authors, Reviewers, Editors)
  - Funding
  - Networking
  - Equity, Diversity, and Inclusion
- Mentorship and Professional Development