



RAIN Africa

The Responsible AI Network Africa

RAIN AFRICA

Q&A

with Samah Mohamed El Kahteb

RAIN Africa's Country Representative

EGYPT



How can we harness the potential of AI in Africa?

Africa is suffering from continuous population growth, food security problems, and an increase in urban areas compared to rural areas. The more our cities become urbanized and overpopulated, the need for smart solutions is increased. Here comes the role of AI in Africa, for example, to face the problem of food security, AI can be applied in agriculture and digital agriculture by working with advanced algorithms and machine learning methods to leverage genomic precision in livestock production models. The early selection of good genetic traits in the livestock production process through genomic accuracy minimizes the ecological footprint, meets changing consumer needs and contributes to the well-being of both humans and animals. From the big picture, many problems that Africa faces now can be solved when AI is applied. Urban AI can play a great role in the transformation of our cities from their traditional paradigm into smart cities based on smart infrastructure, smart governance, smart energy resources, smart health care, and smart education.



What are the potential benefits and risks of AI in Africa?

Africa can benefit from AI applications in many ways. AI shortens the execution time of tasks. It can enable multitasking and reduce the workload of existing resources. AI enables tasks that were complex to be performed without significant cost. It empowers individuals with various disabilities and it can be deployed across industries because it has mass-market potential. AI facilitates decision-making by making processes faster and smarter. In terms of risks, urban designers aim to create new cities in the suburbs of the existing cities. This will trigger a risk regarding those left behind and pose serious questions regarding the destiny of Central Business Districts (CBDs) and inner communities. For example, it is predicted that the CBDs in Cairo may become the habitat for crimes and Suspicious Businesses, causing a radical change in land-use patterns of the whole city of Cairo. Far beyond, this shift in urban land-uses and patterns will increase the social gap provoking social segregation between social classes.



What concerns and ethical challenges related to the use of AI are especially prevalent in the African context?

There is an urgent call to raise public awareness of the benefits of smart technology and its importance in improving quality of life. However, here comes the challenge of public resistance as a significant percentage of people in Egypt with a low educational level, along with elderly people, are not qualified to understand the benefits of urban AI. And until now, there are no efficient services that meet their needs in a flexible and easy way. One of the riskiest ethical challenges that may be faced by the application of AI in Africa is data privacy and hacking. New cyber-attack methods will be invented to take advantage of certain weaknesses in AI technology; therefore we will need to think about data protection. Prudent governance at the global level will be essential to ensure that this era-defining technology will bring about broadly shared safety and privacy.



What are the recent major developments in AI in your country?

Egypt plans to have 20 smart cities by 2030, where new technologies, ICT, IoT and different smart solutions will be implemented. But still, these smart solutions in urban design are not widely used in Egypt. Egypt has started to accredit the concept of AI in different fields. There are examples where AI is being used in the context of smart governance (e.g., : the Egyptian government electronic gate, smart card system, new administrative capital as future smart city, Egypt ICT 2030 strategy, telecommunications, ICT company establishment, smart village construction, and disability education program). The government now pays great attention to research projects in the field of AI. Some startups start to appear in this field as well. Still, academia should play a role in the development of AI in Egypt.

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What are the AI projects you are currently working on?

Currently, I am the PI of the research project "The Cairo Charter: a framework for social and environmental justice-driven Urban AI in Cairo & beyond" that is funded by Facebook Research & Human science research council, South Africa(HSCR) . The Cairo Charter will be a framework for advancing justice-driven AI in smart city planning and development in Cairo, across the African continent, and beyond. We got seed fund from Facebook research to support the development of this charter via a design workshops. I am also the PI of the Smart & Future Cities Laboratory for Sustainable Urban Solutions, which is a research project aiming to capacity building of Egyptian academics and practitioners in the field of smart cities and Urban AI. My teaching courses, consultancy work and research are focusing on smart cities, Urban AI and future cities.



What do you hope the Responsible AI Network Africa will achieve?

I hope that the Responsible AI Network Africa will help connect African researchers in the field of AI together, support the capacity building of young researchers, open new opportunities in AI research, strengthen the role of AI, and give support to research and development. Some of the curriculums in African cities are outdated and need to be updated with new trends and technologies. AI should be studied in many disciplines, including urban design and planning. I wish we can, in the future, build such Urban AI curriculums with emphasis on social and environmental ethics.



SAMAH MOHAMED EL KAHTEEB

Dr. Samah El-Khateeb is an Associate Professor in the Urban Design & Planning Department, Faculty of Engineering at the Ain Shams University. Prior, she used to be the Head of the Architecture Department at the Effat College of Architecture and Design in Saudi Arabia (2014-2018). Dr. El-Khateeb leads the Smart and Future Laboratory for Sustainable Urban Solutions (funded by Science and technology development fund in Egypt -STDF), and the Principal Investigator (PI) of the Cairo charter; a framework for social and environmental justice-driven Urban AI in Cairo & beyond (project funded by Facebook Research & Human science research council, South Africa- HSCR). Her research work is focusing on future and smart city design and sustainable neighborhood guidelines. She was the PI for many research projects since 2011 between Egypt and Germany (e.g., the Ezbet Project). On the practical level, Dr. El-Khateeb was the Executive Director of Prime Engineering Consultants (2007-2013). Currently, she is smart cities consultant and urban planning consultant for many projects.

For more info about research projects: the Smart and Future Laboratory for Sustainable Urban Solutions (SFCL)

<https://sites.google.com/view/smarturbanlaboratory>

CairoCharter:<https://sites.google.com/view/urban-ai-cairo>

<https://shams.academia.edu/samahelkhateeb>

<https://www.linkedin.com/in/samah-el-khateeb-968494190/>

<https://www.facebook.com/samah.m.khateeb/>

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