

Health Sector AI Roundtable

Hosted by  Qhala



Attendees including stakeholders in the health sector, AI practitioners, medical practitioners, academia, government and technology companies discuss how leveraging on AI technology can help transform healthcare in Kenya with tailored solutions to problems.

Executive Summary

The swift advancement of AI underscores the importance of engaging sector stakeholders to identify and address the most critical needs in the field. This collaborative approach is essential for effectively navigating the evolving landscape of AI in healthcare, while ensuring the development of contextualized solutions.

As a company Qhala is renowned both regionally and globally for our role as an ecosystem builder and convener. We unite key stakeholders across diverse technology sectors to drive innovation and collaboration. The Health Sector AI Roundtable was one such event where we gathered medical practitioners, healthcare policymakers, and the Ministry of Health (MoH) to discuss the safe deployment of AI for enhanced healthcare outcomes for Africa.

Driven to leverage on digital transformation for better healthcare in Africa, Qhala hosted the first ever Health Sector AI Roundtable on 18th July, 2024, from 9am - 2:30pm.

We were delighted to have more than 50 diverse stakeholders in the room from the health sector, such as AI practitioners, medics, academia, government and technology companies. Together, they engaged in dynamic discussions on how tailored technological solutions can address existing challenges and drive transformative advancements in healthcare.

The hybrid event reinforced the need for a collaborative, people-centred approach to develop systems capable of addressing complex challenges. It was emphasized that AI's role in healthcare is not to replace doctors but to augment their expertise, enhance their capabilities, and enable more precise and efficient patient care.

The roundtable underscored the crucial need for effective data collection and sharing. It emphasized the importance of developing a strong culture and framework for exchanging information across sectors to successfully implement essential AI technologies in healthcare.

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Introduction

24%

of the global disease burden is accounted for by Africa.

3%

of the global health workforce is in Africa.

3:10,000

on average, Africa has only 3 physicians per 10,000 people.

34:10,000

high-income countries have 34 physicians per 10,000 people.



World Health Organization

1:1,000

recommended doctor-to-patient ratio by World Health Organization (WHO)

1:17,000

the current doctor-to-patient ratio in Kenya

The rapid acceleration of emerging technologies holds significant potential for addressing healthcare access challenges in Africa, particularly those stemming from a shortage of healthcare workers. A survey across 47 African countries revealed a total health workforce of approximately 3.6 million, with a regional density of physicians, nurses, and midwives at just 1.55 per 1,000 population. This low density greatly contributes to inequitable access to healthcare, especially for those in rural areas and poor households, who have much less access to quality care. To meet the healthcare needs of Africa's vast population, particularly those at the "base of the pyramid," innovative solutions that diverge from the conventional models used in high-income countries are essential.

Amid these challenges, Africa's young population is increasingly taking charge, fueled by improved access to information and its delivery in ways that resonate with them. In the face of political upheaval, global economic instability, and significant climate events, Africa, with the world's largest digital-first population, is uniquely positioned for rapid progress, driven by its youth who are not entirely dependent on government direction.

As generative artificial intelligence (Gen AI) tools become more accessible, Africa's youth will play a crucial role in building solutions to address healthcare access challenges and drive deeper civic engagement. This engagement could influence how governments allocate resources to critical sectors such as health, education, and agriculture. For instance, Qhala, a digital transformation and innovation management company, with a largely youthful workforce, is developing a maternal and child healthcare companion that simplifies access to healthcare information and empowers guardians for confident parenthood. This tool features support for local languages, starting with Sheng, and will later include more languages spoken in Kenya. It is also accessible through SMS and WhatsApp, making it widely available.

Despite this growing agency among Africa's youth, the private sector will continue to play a vital role in developing technology-driven solutions. But the challenge remains: how do we create effective solutions for a highly fragmented and critical sector like healthcare, while ensuring they are replicable across the continent and scalable within countries? This is the million-dollar question. To fully leverage the rapid advances in technology, the health sector can no longer ignore the urgency of adopting digital health records. In the past, this would have required significant investments in hardware and training for health workers. Today, however, an internet-enabled smartphone can transform paper-based records into digital ones using optical character recognition (OCR) forms. This approach enhances existing infrastructure rather than overhauling it, enabling faster and more cost-effective digitization of medical records.

However, OCR forms are only part of the solution. Computer algorithms are needed to reliably detect and classify the information on these forms into predefined categories. Once classified, this data can be analysed to extract relevant insights, such as demographic trends and patient outcomes related to specific treatments. Local initiatives aimed at developing AI-driven solutions, whether to improve organisational efficiency or tackle specific health challenges within communities, are generating crucial evidence needed to help scale these technologies. Defining the application of these initiatives, will also inform the human resources required to develop, deploy, and sustain these solutions across the continent.

Hosted by Qhala, the Health Sector AI Roundtable went down successfully on Thursday, July 18, 2024, from 9:00 AM to 2:30 PM. We united key stakeholders across diverse technology

sectors to drive innovation and collaboration catalyzing Africa's digital future. Qhala is regionally and globally recognized as an ecosystem builder and convener, bringing together key stakeholders from various technology-intersecting sectors. The Health Sector AI Roundtable was one such event where we gathered medical practitioners, healthcare policymakers, and the Ministry of Health (MoH) to discuss the safe deployment of AI for enhanced healthcare outcomes for all of Africa. This roundtable marks a significant step in Qhala's mission to catalyse digital transformation in Africa. It aimed to foster innovation, enhance collaboration, and drive impact in health, education, agriculture and other sectors.

Expected outcomes include the development of strategic roadmaps for integrating AI into healthcare systems, the identification and dissemination of best practices for AI implementation in the health sector, and the generation of policy insights to support AI adoption and ethical considerations in healthcare. One other key outcome was to devise a way in which we could involve all the key stakeholders during the process of integrating AI into the healthcare sector in Africa.

The roundtable also underscored the crucial need for effective data collection and sharing. It emphasised the importance of developing a strong culture and framework for exchanging information across sectors to successfully implement essential AI technologies in healthcare.

Opening Remarks



Dr. Shikoh Gitau, CEO of Qhala, introduced Qhala and outlined its work in research, prototyping, and policy development. She highlighted the company's commitment to developing an AI ecosystem in Africa, focusing on nurturing talent, expanding datasets, and enhancing computing resources. She particularly emphasized the need for adequate computing power and the establishment of shared computing platforms across the continent.

Dr. Shikoh emphasized the need to develop practical use cases tailored to the African context, in sectors like health, education, financial services, and agriculture. She illustrated the potential of AI by citing the significant challenge of a 1:15,000 cancer doctor-to-patient ratio and the shortage of pathologists—only 3,000 across the continent—as critical areas where AI could make a meaningful impact.

She emphasized the need for massive awareness creation and the reduction of AI regulation among African policymakers and data protection authorities. Dr. Shikoh expressed Qhala's commitment to catalyzing Africa's digital future. She noted that 80% of Africa is supported by SMEs and that the injection of 1000 specialists in areas such as business management, technology, operations, human resources, and industry-specific expertise like agribusiness and renewable energy would be a game-changer for the continent. Qhala's goal of impacting 100 million lives by 2032 was shared. Finally, Dr. Shikoh mentioned the company's efforts in building connected solutions, such as Tibalink and Atunzi AI.

Random views on Digital Health in Kenya

Local Talent: There is a need to secure support and buy-in for locally produced solutions, as well as supporting local talent and innovation through a "Buy Kenya, Build Kenya" approach.

Challenges in Healthcare IT: Enterprise Resource Planning (ERP) systems have demonstrated limitations in the healthcare sector. Effective integration of health data systems is crucial, yet concerns persist regarding data storage, ownership, and security. The potential for data breaches and ransomware attacks poses significant risks.

Human Factor in Healthcare: The role of human expertise in healthcare delivery is paramount. The balance between medical art and science must be considered when developing healthcare solutions. Effective collaboration with medical professionals is essential to identify key priorities and address existing gaps.

Decision Making and Technological Influence: National decision-making processes in healthcare are influenced by various factors, including national health budgets, AI, and other interests. It is imperative to establish ethical guidelines for AI in healthcare, particularly regarding liability for medical errors.

Data Accessibility and Technological Advancement: Unlocking government-held datasets is crucial for driving innovation in the healthcare sector. The rapid advancement of big data and technology, exemplified by Meta's Kikuyu language model presents both opportunities and challenges. Opportunities include translation, speech to text transcription which facilitate communication while challenges may arise from inaccurate translation due to limited training datasets. Local tech talent should focus on building sustainable solutions rather than short-term projects dependent on foreign investment.

Key Considerations for Healthcare System Development: Designing healthcare systems with a focus on stable elements, such as the number of healthcare workers, is essential. This approach can improve the system's resilience and adaptability to change.



Caroline Mbindyo
CEO: AMREF Health Innovations
and Board Director at Qhala Ltd

Caroline from AMREF began her presentation by exploring the problem-solving potential of technology. She noted the alarming statistics of diarrhoea, a leading killer of children, accounting for approximately 9 percent of all deaths among children under age 5 worldwide in 2021. This translates to over 1,200 young children dying each day, or about 444,000 children a year, despite the availability of a simple treatment solution.

Highlighting Africa's projected growth of 2.9 trillion with a 3% annual growth rate, Dr. Caroline argued that alleviating poverty for only 11 million Africans out of a population of 1.4 billion is insufficient. She emphasized the potential of AI to create half a million jobs annually while acknowledging the prevalence of analog content.

The speaker drew a comparison between the amount allocated to debt servicing and investments in sectors like agriculture, health, and education. She further highlighted Africa's agricultural potential and rich natural resources while questioning the continent's benefits from these assets.

Caroline emphasized the interconnectedness of health with other sectors. She highlighted biases in health research, particularly the focus on 70kg male subjects, leading to biased data and practices. The need for holistic solutions was stressed, advocating for a combination of government policies, data infrastructure, and technology to drive meaningful change at both national and global levels.

Africa's data deficit was identified as a critical challenge. Caroline raised questions about data usage, quality, collection methods, private sector data accessibility, data sharing, trust, digitization, and data sovereignty. The speaker explored the potential of AI for Africa, emphasizing the need to define relevant applications. She used the example of using nutrition data to predict malnutrition as a potential use case.

- Approximately 1 in 3 people living in sub-Saharan Africa are undernourished.
- Some 589 million people live without electricity in sub-Saharan Africa.
- Less than 1 in 5 African women has access to education - increasing their chances of not immunising their children.
- More than 1 million people die from malaria each year - mostly children under the age of 5.

“When health is absent, wisdom cannot reveal itself, art cannot manifest, strength cannot fight, wealth becomes useless, and intelligence cannot be applied”

Greek Philosopher Herophilus (335–280 BC)

The Headlines and the Trendlines

Headlines

- High disease burden
- 50% of the continent is still analog
- Climate change
- Political and social unrest
- Complex legal, policy, and regulatory environment
- Debt crisis
- Low per capita investment in health
- High unemployment rate

Trendlines

- Youngest continent. Fastest growing digital native population
- Fastest growing region
- 2 in 3 people of working age by 2050
- Population doubled by 2050
- Largest single market
- Limited sunk costs in infrastructure
- Arable land
- Natural resources



Figure 6

Generation and usage of datasets globally



Note: This map shows how often 1,933 datasets were used (43,140 times) for performance benchmarking across 26,535 different research papers from 2015 to 2020. Countries are distorted by frequency of usage. Data sets originating in the US account for the most usages (26,910). Source: [Mozilla Foundation](#)

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Use Cases, Perspectives and Highlights from the Roundtable

One of the key highlights shared by experts in the room included antimicro.ai, an existing innovation that uses both local and global data to forecast resistance patterns.



Dr. Rachael Kanguha
Paediatrician | Health Policy Advisor
| Researcher | Medical Educator | Avid
Child Health Advocate |
Breastfeeding Champion



Dr. Fred Mutisya
Medical Doctor | Award winning AI
Developer | HIV Best Practice
Advocate | Medical Superintendent

This tool, created and presented by Dr Fred Mutisya from the Narok County Council, also showed AI's ability to predict cardiovascular diseases, especially in light of the concerning trend of younger populations experiencing heart attacks. It was determined that AI could help prioritize at-risk patients and suggest preventive measures.

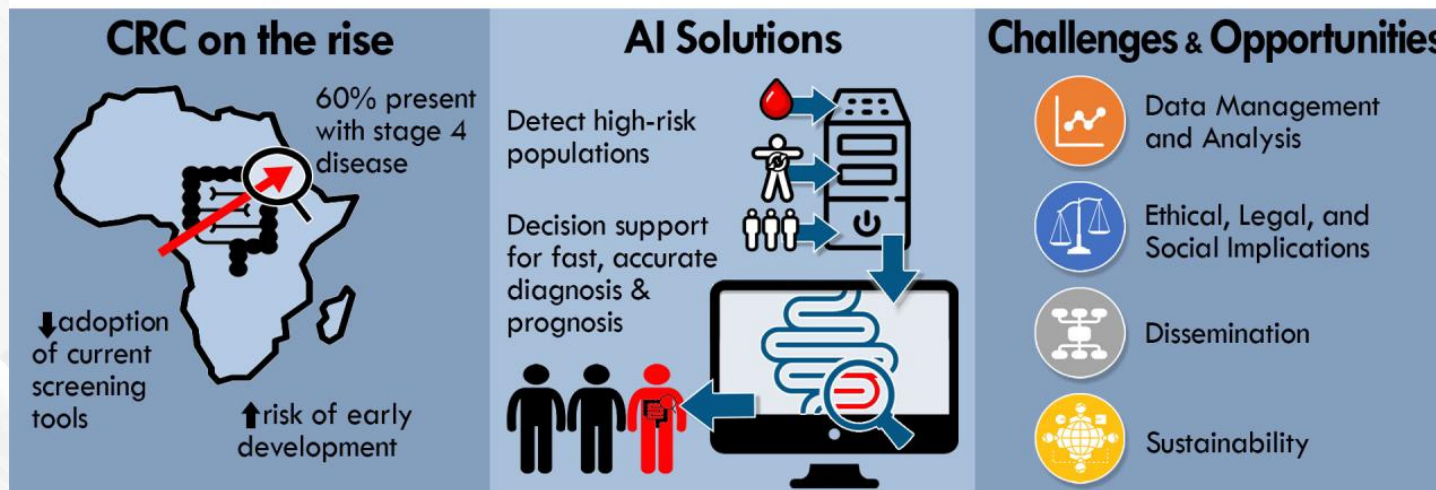
Precision while distinguishing symptoms during diagnosis was also a focal point. On this, the discussion considered the potential for AI to differentiate between diseases with similar symptoms, case in point, tuberculosis and lung cancer. Dr Stephen Ojwang shared from his experience that Convolutional Neural Network (CNN) models have shown promise in this regard, demonstrating improved diagnostic accuracy and patient outcomes.

The discussions also touched on the importance of training a new generation of data scientists and machine learning experts to develop Africa-centric AI solutions. They would also work to address existing AI bias, to ensure fair outcomes for all African populations.

Citing the challenge of counterfeit medicine experts pointed out the need for use of AI to improve medication distribution and accessibility, ensuring that genuine drugs reached those who needed them in time. A suggestion shared by Dr. Wachira Ngatia would integrate data from the Ministry of Health with global datasets, and use advanced techniques like GIS and machine learning to gain deeper insights into public health issues, in order to address stock-out challenges and provide more accurate forecasts for resource distribution.

The roundtable concluded with discussions on AI's potential to enhance administrative efficiency in healthcare, through transcriptions of medical consultations and predicting whether patients can afford loans for various health treatments, as suggested by Dr Jane Kyula.

Early Detection of Colorectal Cancer (CRC) using Artificial Intelligence: It's Prime Time in Sub-Saharan Africa



Waljee et al. *Gut* March 2022

M MEDICAL SCHOOL
UNIVERSITY OF MICHIGAN


THE AGA KHAN UNIVERSITY

Gut

Qhala on Health and AI

Qhala is intentional on human centred AI, contextualizing our needs in different domains especially healthcare where we build products and services that are acceptable, adaptable and speak to sustainability.



Health System evidence driven decisions have never been more important. The strain on resources increasingly means governments must deliver the highest possible impact for every dollar spent on health care. This means prioritizing the health needs of the population with a focus on preventative care rather than curative care. We analyze health data to support the government to make informed decisions for investment on health procurement and various health care institutions to drive quality health care access for the people.

Atunzi AI by Qhala is a maternal and child healthcare companion that simplifies access to prenatal and antenatal care information. It is designed to provide accessible and personalized healthcare guidance. Atunzi aims to simplify the complex journey of pregnancy and early childhood. Its range of features include personalized recommendations, developmental milestone tracking, language flexibility for inclusivity and ability to understand and process various forms of input, such as text, voice and images. With these, Atunzi can reach a wider audience including those with limited literacy or digital skills. We are the digital innovation partner for Africa CDC and are leading charge around AI for products and use cases around Africa.

Qhala's Action Points on AI for Health and Other Sectors

- 01 Content Creation & Dissemination**

Finalize an opinion piece on AI in healthcare. Develop a comprehensive paper on AI within the health sector. Organize roundtable discussions to generate content for publications. Target AI-focused journals (AIT Review) and US publications. Create compelling narratives and amplify the organization's voice.
- 02 Data and Model Accessibility**

Identify and catalog existing healthcare datasets. Create a public platform to showcase AI models. Collaborate with the African CDC on innovative AI applications. Develop an Index for AI talent, language, and African-specific AI contexts. Invest in training AI professors.
- 03 Framework Development**

Establish clear indicators and metrics to assess AI and digital readiness. Identify tangible use cases for AI in healthcare.
- 04 Short-Term (by Q4 2024)**

Brainstorm and develop AI-powered solutions. Demonstrate the impact of AI through concrete projects. Explore the potential of AI in child online safety.
- 05 Mid-Term (August 2024)**

Organize a roundtable discussion on AI in agriculture. Participate in the Transform Africa AI and Health conference

These action points outline a strategic approach to leveraging AI for healthcare advancement, focusing on knowledge dissemination, data infrastructure, talent development, and practical applications.

At Qhala, we recognize the immense potential digitization holds for Africa's transformation. We are on a mission to ignite Africa's digital transformation journey by empowering our communities and leaders with cutting-edge digital solutions and laying strong foundations for a digital-first economy. We're igniting transformative digital solutions across Africa, steering the continent toward a future defined by innovation, sustainability, and empowerment. Our commitment to pushing the boundaries of digital transformation resonates in every aspect of our work, from healthcare and life sciences to the dynamic landscapes of the digital economy and financial services.

Contact us through

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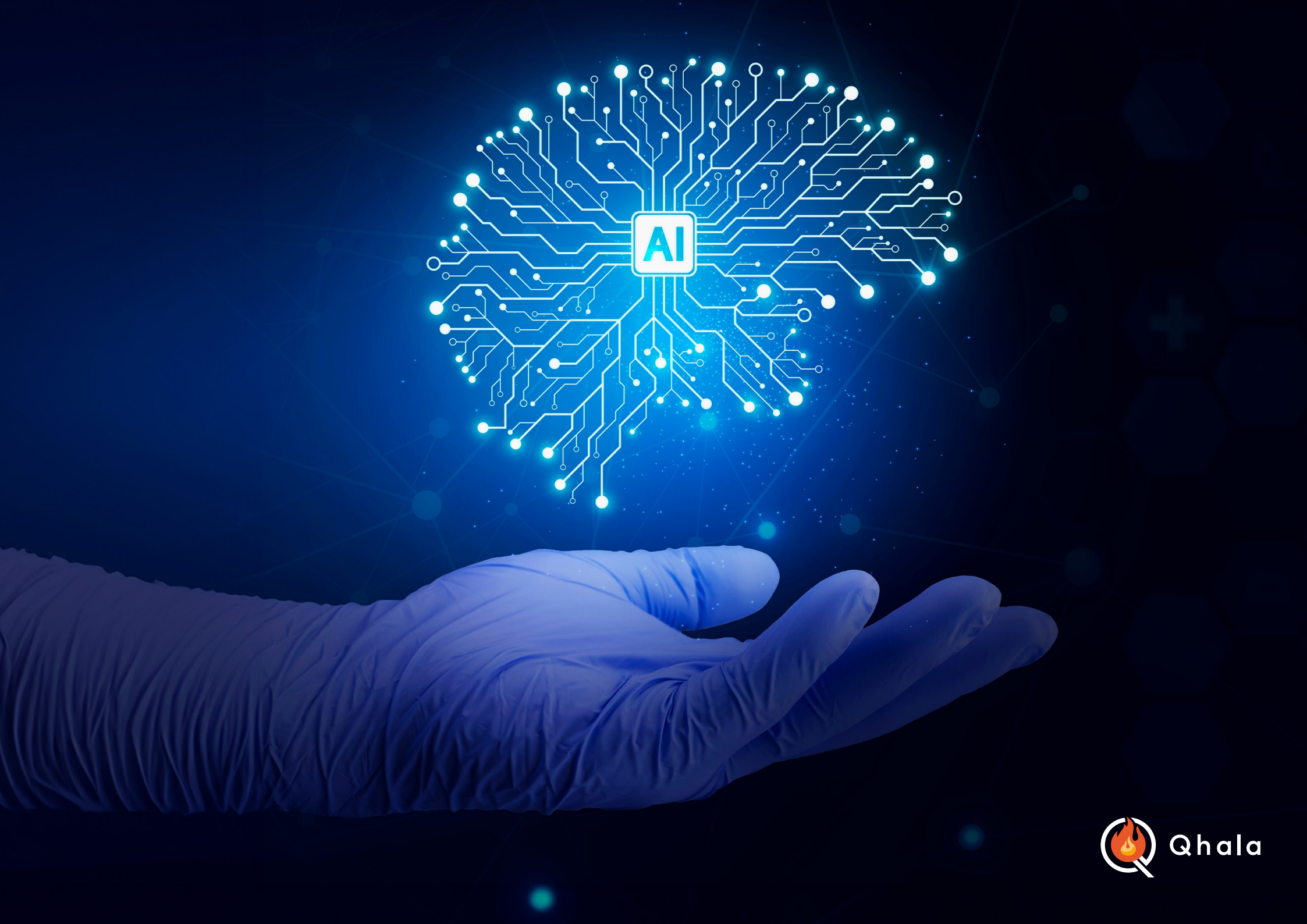
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AI