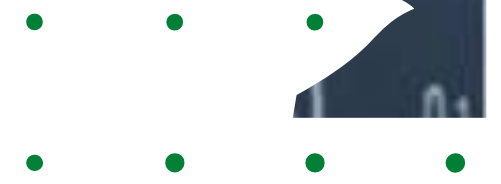




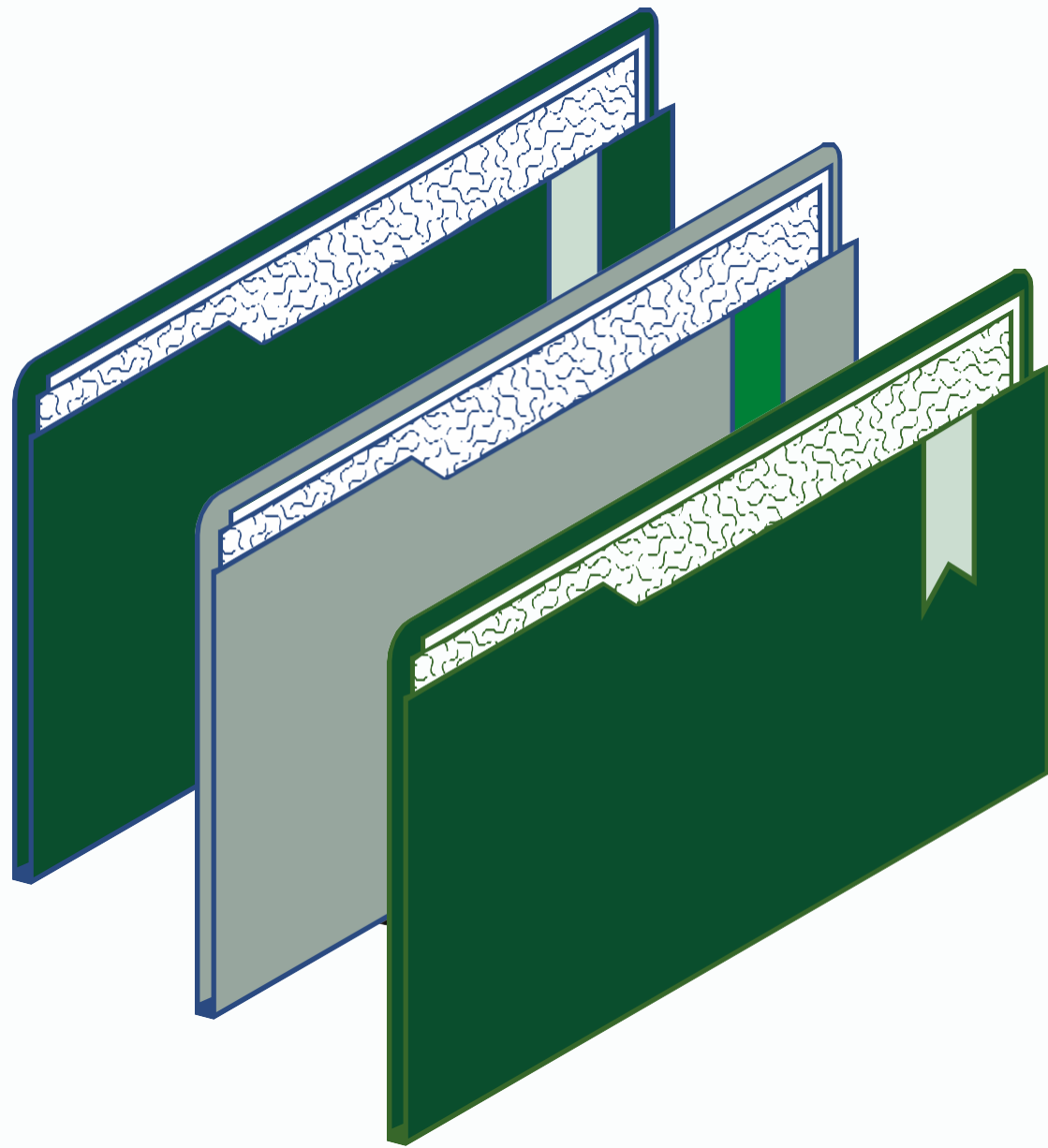
# AI FOR NATIONAL DEVELOPMENT: A FOCUS ON BUILDING TALENT

A position paper

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# Meet the Instructor

**Dr Amina Sambo-Magaji** is a computing professional with over 20 years of experience

## Academics

- **PhD in Artificial Intelligence**
- **Master's Distinction** - Information Engineering with Network Management, both from Robert Gordon University, Aberdeen, UK.
- **First Class Computer Science** from ATBU.
- International certifications from Harvard, MIT etc.

## Career

Pioneer Director Digital Skills - NITDA

4 years National coordinator, NITDA's Office for Innovation and entrepreneurship.

14 years in EFCC in Several Capacity

2 Year Graduate Assistant ATBU



# Artificial Intelligence (AI)

## Components of AI



### Applications

- Image recognition
- Speech recognition
- Chatbots
- Natural language generation
- Sentiment analysis

### Software/hardware for training and running models

- GPUs
- Parallel processing tools (like Spark)
- Cloud data storage and compute platforms

### Types of models

- Deep learning
- Machine learning
- Neural networks

### Programming languages for building models

- Python
- TensorFlow
- Java
- C

AI is the simulation of **human intelligence processes** by machines, especially computer systems. Specific applications of AI include expert systems, natural language processing, speech recognition and machine vision.

# Why Build Nigeria's AI Capacity?

- Nigeria's potential to unlock AI-driven prosperity hinges on fostering a skilled and diverse AI workforce
- Nigeria has the **largest youth population** in Africa, presenting a fertile ground for AI talent development.
- Create and access digital jobs.





# Where we are so far?

- **Digital Capacity Building initiatives:** organizes capacity building programs, workshops, and seminars on AI and other emerging technologies targets various stakeholders, including students, professionals, entrepreneurs, and government officials.
- **IT Talent Initiatives:** 3MTT skill enhancement programs, online courses, and certifications in AI and related fields. These programs aim to upskill and reskill individuals, enabling them to thrive in the rapidly evolving tech landscape. Coursera, CISCO and so on.
- **Non for profit:** DSN, AI Girls in Engineering Club, AI Saturday, Lagos.
- **Under/Post graduate:** NOUN-ACETEL, Private Universities, some public etc



# Where we are so far?

- **AI physical platforms:** Innovation hubs, NCAIR, academia, private sector.
- **NCAIR:** National Centre for Artificial Intelligence and Robotics promotes research and development on emerging technologies and their practical application in areas of Nigerian national interest. The center has a state-of-the-art facility, along with its modern digital fabrication laboratory (FabLab).
- **The National AI policy (NAIP)** in draft has the objective to maximize the benefits, mitigate possible risks, and address some of the complexities attributed to using AI in our daily activities. Some of the areas the government is focused on are building Nigeria's technical talents in AI readiness and other focus areas, to make Nigeria a talent exporter in AI. The government also has a goal of achieving 50, 000 jobs in the Nigerian AI industry by 2030.
- **National AI Strategy:** coming soon.





# Barriers Hindering AI in Nigeria

- **Funding for R&D:** Inadequate financial resources for research and development in AI hinder the exploration and implementation of innovative solutions. This affects the ability to conduct experiments, develop prototypes, and push the boundaries of AI applications.
- **Skill Gaps in the Workforce:** The shortage of skilled professionals in AI creates a bottleneck in the adoption and implementation of AI technologies. This includes not only technical skills but also an understanding of the ethical and societal implications of AI.
- **Lack of Clear Regulatory Frameworks:** Absence of well-defined and transparent regulations specific to AI can impede industry growth. Companies may be hesitant to invest in AI without a clear legal and ethical framework, leading to slower adoption and innovation.
- **Lack of Awareness:** Many stakeholders are unaware of AI's potential and how to harness it effectively.





# Addressing Nigeria Challenges through AI



1

Investing in talent development programs will equip Nigerians with the skills and knowledge needed to **participate in and benefit from the expanding AI-driven economy.**

2

Investing in talent development will empower Nigerian experts to **design and deploy AI solutions** tailored to local needs, thereby driving sustainable development and inclusive growth

3

Building a skilled workforce in AI research, development, and application will **position Nigerian industries** to harness AI's transformative power and compete globally



# Addressing Nigeria Challenges through AI contd'

4

Developing local talent in AI governance, ethics, and regulation will ensure the responsible and effective use of AI technologies to address governance challenges and improve public service delivery.



5

Developing local expertise in AI-enabled infrastructure management will enable Nigeria to address infrastructure deficits and build resilient, future-ready infrastructure systems.

6

AI can optimize infrastructure planning, maintenance, and utilization in Nigeria, improving the reliability, efficiency, and sustainability of essential services such as health, transportation, energy, and water supply.





# Taking Deliberate Action



# Building the Pipeline: From Classrooms to Careers

- **Early Exposure:** Integrate AI fundamentals into primary and secondary STEM curricula
- **University Innovation:** Strengthen university-industry partnerships like the collaboration between the University of Lagos and Andela to develop research-driven AI programs tailored to local needs.
- **Upskilling and Reskilling Initiatives**





# Empowering Nigerian Talent for Productivity Gains

- AI-powered automation and optimization can significantly enhance productivity across Nigerian industries, creating opportunities for talent development
- Developing skilled Nigerian talent in AI implementation and management enables businesses to leverage AI technologies effectively, driving productivity gains and competitiveness.
- AI development must also reflect the diversity of the population to avoid biases and ensure equitable benefits



# Attracting and Retaining Top Talent

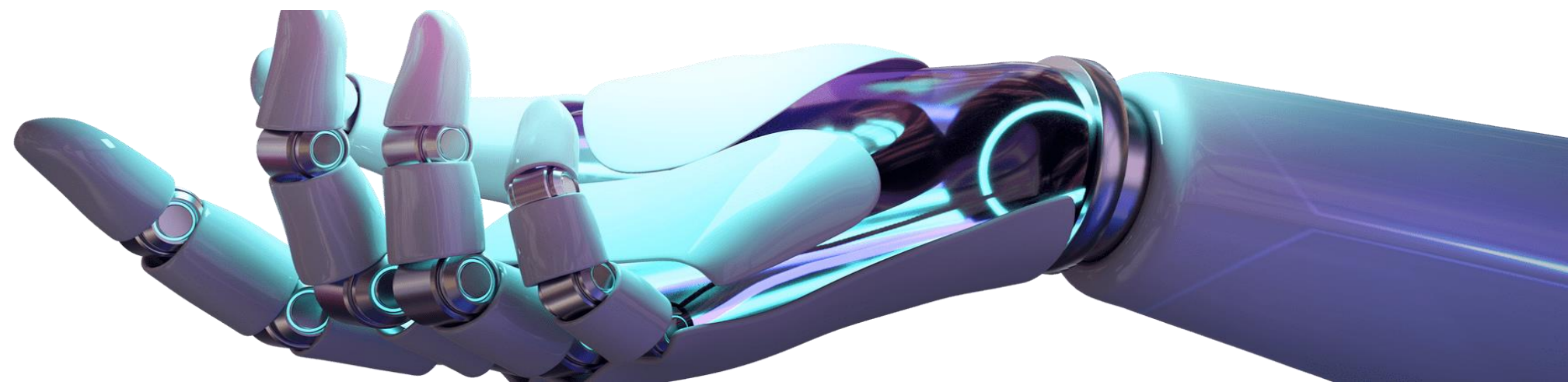
**Competitive Landscape:** Create a thriving AI ecosystem in Nigeria to attract and retain global talent, by;

- Offering competitive salaries and benefits packages

Streamline immigration processes for skilled AI professionals in diaspora.

- Invest in research and development infrastructure and create exciting career opportunities.

- Foster collaboration between government, educational institutions, private sector, and civil society organizations







# Summary

Overcoming barriers in the **short term** requires targeted actions

1. addressing funding,
2. skills, and
3. regulatory issues.

However, for sustained growth, a **long-term** commitment to

1. education,
2. research infrastructure, and
3. comprehensive policies is crucial to nurture a thriving and sustainable AI ecosystem in Nigeria.

# Conclusion

- ❖ The critical role of talent development in realizing the benefits of AI for Nigeria's socio-economic advancement cannot be overemphasized.
- ❖ By working together, stakeholders can unlock the vast potential of AI for the benefit of all Nigerians.
- ❖ It will prepare Nigeria to be a leader in the global AI Talent pool.



**THANK YOU**