The Nimi Briggs Effect, Artificial Intelligence And The Future Of Quality University Education In Nigeria

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THE NIMI BRIGGS EFFECT

- …the lustre obtained from deploying quality input and process elements to deliver quality graduates and having as catalysts, well-motivated human resources.

- **What is Artificial Intelligence (AI)?**

- **Why give AI colour to a lecture to celebrate Nimi Briggs?**

Operational Definitions

- A set of **technologies** that enables machines to **mimic** human intelligence.

- The process of **simulating** human intelligence by machines which enables them to perform **human-like**

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How Does AI Work? What's Under The Bonnet

- No magic

WHAT IS "MAKING NOISE" INSIDE THE GRAMOPHONE?
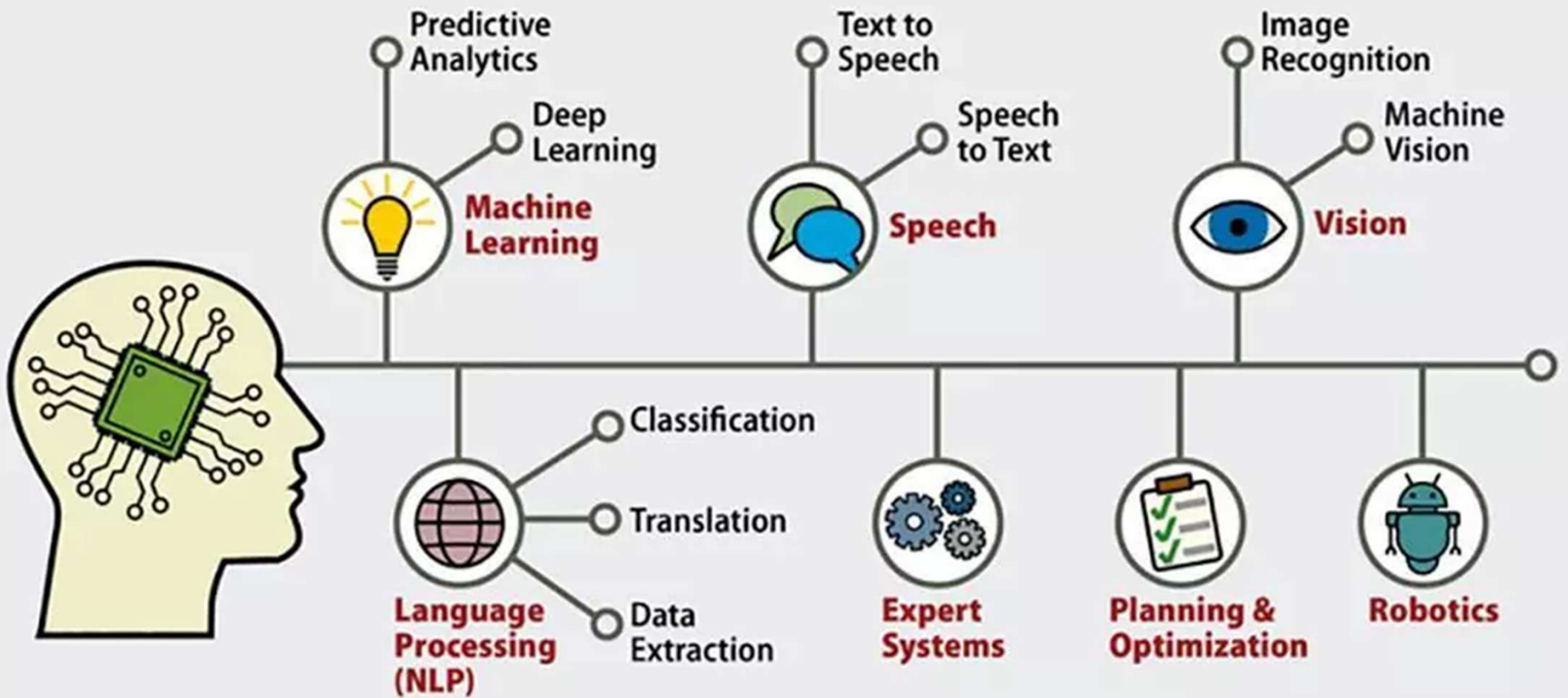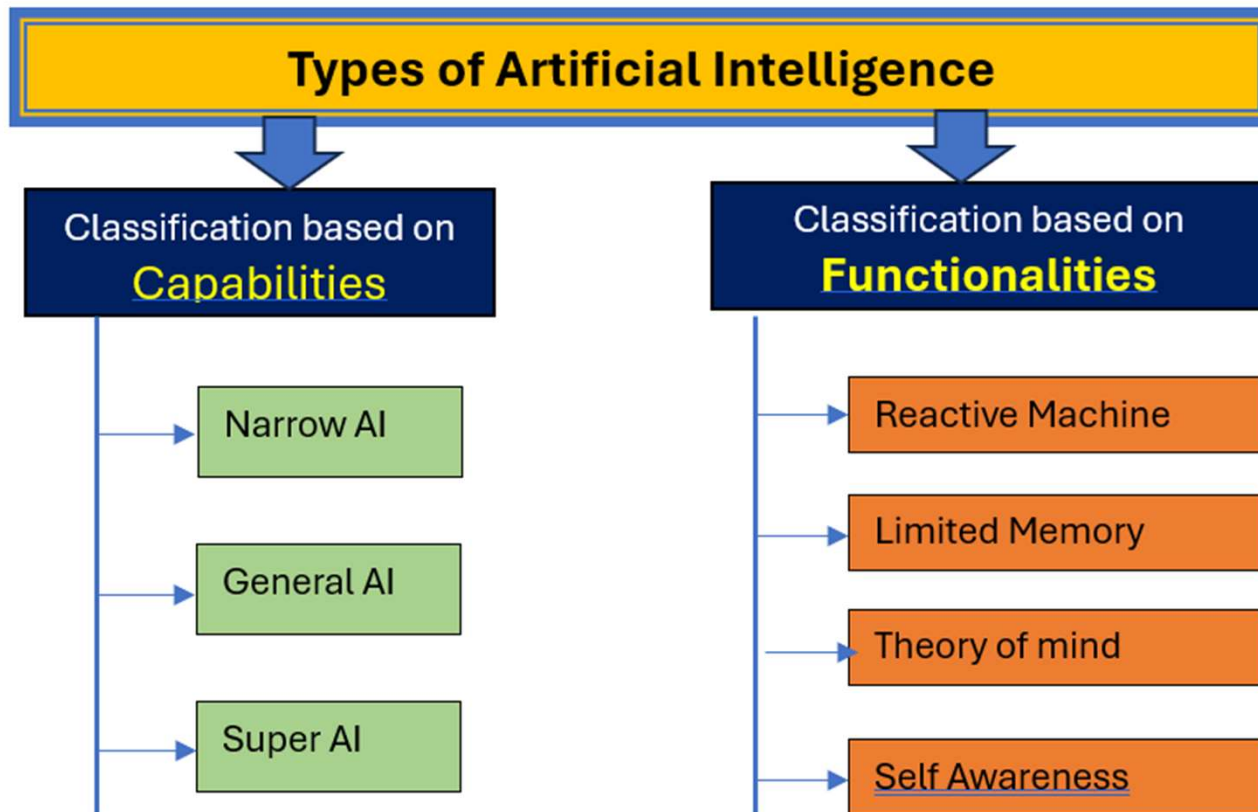
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THE ABC OF HOW AI IS SET UP

- The technology (computer) has no mind of its own.

- Just like training a dog or a cat, humans **"train" the artificial object** on **how to carry out specific tasks.**

- A huge **knowledge base** is provided the artificial object as well as a step-by-step procedure (known as **algorithm**) from which to solve problems. This results in the artificial object building up "intelligence".

- **The more the artificial object has access to "big data" in the knowledge base, the better it is in solving problems.**

- The trick for improving intelligence of the artificial object is to keep pumping data into its knowledge base and providing more sophisticated algorithms for it to solve more complex problems.

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TYPES OF AI

Types of Artificial Intelligence

Classification based on **Capabilities**
- Narrow AI
- General AI
- Super AI

Classification based on **Functionalities**
- Reactive Machine
- Limited Memory
- Theory of mind
- Self Awareness

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BRIEF HISTORY OF ARTIFICIAL INTELLIGENCE

Date	Event
Antiquity	Greek myths of intelligent artificial beings
1st to 10th Century BC	Sacred mechanical objects in African and other civilisations believed to be capable of intelligent actions and emotions.
1st Century AD	Hero of Alexandria created mechanical men and other automatons- the world's first practical programmable machines.
1795-1805	The simplest kind of artificial neural network- linear network produced
1950	Alan Turing published "Computing Machinery and Intelligence", which proposes the Turing test as a measure of machine intelligence and answered all of the most common objections to the proposal "machines can think" Isaac Asimov published his Three Laws of Robotics
1956	The Dartmouth College summer AI conference is organized by John McCarthy, Marvin Minsky, Nathan Rochester of IBM and Claude Shannon. McCarthy coins the term artificial intelligence for the conference.
1965	Joseph Weizenbaum (MIT) built ELIZA, an interactive program that carries on a dialogue in English language on any topic. It was a popular toy at AI centers on the ARPANET when a version that "simulated" the dialogue of a psychotherapist was programmed.
1990s	• Revival and emergence of machine learning (ML) • Major advances in all areas of AI, with significant demonstrations in machine learning, intelligent tutoring, case-based reasoning, multi-agent planning, scheduling, uncertain reasoning, data mining, natural language understanding and translation, vision, virtual reality, games, and other topics.
1994	With passengers on board, the twin robot cars VaMP and VITA-2 of Ernst Dickmanns and Daimler-Benz drive more than one thousand kilometres on a Paris three-lane highway in standard heavy traffic at speeds up to 130 km/h. They demonstrate autonomous driving in free lanes, convoy driving, and lane changes left and right

	highway in standard heavy traffic at speeds up to 130 km/h. They demonstrate autonomous driving in free lanes, convoy driving, and lane changes left and right with autonomous passing of other cars.
2000s	The genesis of Generative AI
2010s	Rise of AI
2011-2014	Apple's Siri (2011), Google's Google Now (2012) and Microsoft's Cortana (2014) are smartphone apps that use natural language to answer questions, make recommendations and perform actions.
2020s	Generative AI reach new horizons
2022	ChatGPT, an AI chatbot developed by OpenAI, debuts in November 2022.
2023	- OpenAI's GPT-4 model is released in March 2023 and is regarded as an impressive improvement over GPT-3.5, - On March 29, 2023, a petition of over 1,000 signatures is signed by Elon Musk, Steve Wozniak and other tech leaders, calling for a 6-month halt to what the petition refers to as "an out-of-control race" producing AI systems that its creators can not "understand, predict, or reliably control" - In November 2023, the first global AI Safety Summit was held in Bletchley Park in the UK to discuss the near and far term risks of AI and the possibility of mandatory and voluntary regulatory frameworks.[163] 28 countries including the United States, China, and the European Union issued a

CURRENT DEVELOPMENTS IN EDUCATION

Current Developments of AI in Education

1. Predictive learning analytics and educational data mining

2. Assisted teaching and learning

3. Adaptive Learning

4. Automated Graded Assessments

5. Augmented Reality and Virtual Reality in Education

6. Natural Language Processing (NLP) For Language Learning

7. Intelligent Tutoring Systems Driven by AI

8. AI in Gamification of Learning

Current State of Development of AI In Agriculture

1. Precision agriculture by analyzing data from sensors, satellites, and drones to optimize planting, irrigation, and harvesting schedules

2. **Crop Monitoring**: AI-powered systems monitor crop health using imagery and provide early detection of diseases or pests, allowing for targeted interventions.

3. Weather Prediction: AI predicts weather patterns, helping farmers plan planting and harvesting times more effectively.

5. Automated Harvesting: AI-powered robots and machines perform automated harvesting tasks, improving efficiency and reducing labor requirements.

6. **Soil Health Monitoring**: AI assesses soil health by analyzing data on nutrient levels and composition, helping farmers make informed decisions about fertilization.
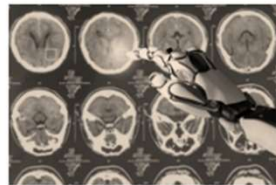

7. Predictive Pest Control predicts and identifies potential pest threats, allowing for timely and targeted application of pest control measures, reducing the need for chemical inputs.

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Developments of AI in Medicine

1. AI aids in diagnosing diseases by analyzing medical images and identifying patterns indicative of various conditions.

2. Enhanced Accuracy in Radiology- AI-powered algorithms enhance the accuracy of radiological interpretations, leading to more precise diagnoses

3. Predictive Analytics for Patient Outcomes- AI utilizes predictive analytics to assess patient data and forecast potential health outcomes, allowing for proactive intervention.

4. Drug Discovery and Development-AI accelerates drug discovery by analyzing vast datasets to identify potential candidates, reducing the time and cost of bringing new medications to market.

5. Personalized Treatment Plans- AI tailors treatment plans based on individual patient data, considering genetic, lifestyle, and environmental factors for more personalized care.

6. Virtual Health Assistants-AI-driven virtual assistants provide information, reminders, and support to patients, improving adherence to

CURRENT DEVELOPMENTS OF AI IN THE MILITARY

Military

Current State of Development of Artificial Intelligence (AI)

Every aspect of military work, from planning operations to transporting troops, from training personnel to providing them with medical care, can benefit from the assistance of AI. The following points are the current state of development of AI in military;

Warfare Systems

- Warfare systems such as weapons, sensors, navigation, aviation support, and surveillance employed AI in order to make operations more efficient and less reliant on human input.
- Taking away the need for full human control of warfare systems reduces the impact of human error and frees up humans' bandwidth for other essential tasks.

Drones Swam

- One of the most exciting developing military applications of AI involve leveraging swarm intelligence for drone operations.
- When a drone receives vital information, it can act upon it or communicate it to other drones in the swarm.

Data Processing and Research

- AI can be helpful for quickly filtering through data and selecting the most valuable information.
- It can also aid in grouping information from various datasets. This can allow military personnel to identify patterns more efficiently, draw more accurate conclusions, and create plans of action based on a more complete picture of the situation.

Combat Simulation

- Military training simulation software is essentially a virtual "war-game" that is used in order to train soldiers.
- This software is able to provide realistic missions and tasks to soldiers, to ensure they gain the most experience possible before applying their skills to real-life situations.
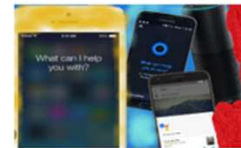
Communication

**Current State of Development of Artificial Intelligence (AI)**

Virtual Assistants

- Virtual assistants such as Siri, Alexa, and Google Assistant have made it easier for people to communicate with their devices.
- With voice commands, users can access information, send messages, make calls, and carry out various tasks hands-free.

Chatbots

- Chatbots are AI-powered tools that can communicate with customers in real-time, providing support, information, and assistance 24/7. By automating routine tasks.
- Chatbots allow businesses to improve customer experience and reduce response times.
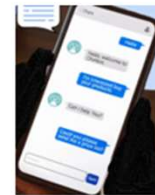
Language Translation

- AI-powered translation tools have made it easier for people to communicate with those who speak different languages.
- With real-time translation, people can communicate across borders, breaking down language barriers and making the world smaller.

Personalized Communications

- AI can analyze a person's communication style, preferences, and behavior, allowing businesses to personalize their communications and provide a better customer experience.
- This can result in increased engagement, improved customer satisfaction, and reduced churn rates.

Improved Accessibility

- AI-powered tools make communication easier for people with disabilities.
- With text-to-speech and speech-to-text technologies, visually or

CURRENT DEVELOPMENTS OF AI IN LAW

LAW

Current State of Development of Artificial Intelligence (AI)

Technology-Assisted Review

Technology-assisted review (TAR) was the first major application of AI in legal practice, using technology solutions to organize, analyze, and search very large and diverse data sets for e-discovery or record-intensive investigations

Legal Bots

- Bots are interactive online programs designed to interact with an audience to assist with a specific function or to provide customized answers to the recipient's specific situation
- Chatbots and virtual lawyer software aredesigned to provide 24/7 legal service, understand legal queries, provide legal information, offer basic legal advice, guide users through legal processes, etc.

Legal Document Automation

- Typically, the time employed in drafting legal documents can be exhausting and most times, create opportunities for errors.
- Lawyers utilize document generation software integrated with word processing tools to simplify user interface and allow for the creation of visually dynamic templates.

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Current state of development of AI in Transportation

Here are some lists of current developments in AI within the transportation sector:

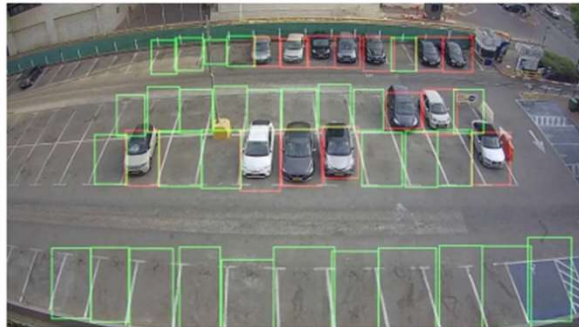Autonomous vehicles: Implementation of self-driving cars, trucks, and buses using AI for navigation and safety.

Traffic management systems: AI algorithms optimize traffic flow, reduce congestion, and improve traffic signal timing.

Smart parking solutions: AI-powered systems guide drivers to available parking spots, reducing time spent searching.

Public transport optimization: AI helps in scheduling, predicting passenger flow, and optimizing routes for public transit.

Predictive maintenance: Using AI to predict when vehicles and infrastructure need maintenance before failures occur.

Drones for delivery and inspection: Use of AI to navigate and deliver goods or conduct infrastructure inspections.

1. **Generative Design Tools:**
   o AI-driven tools for exploring and generating design alternatives.

2. **Virtual and Augmented Reality Integration:**
   o Integration of AI with VR and AR technologies for immersive design experiences.
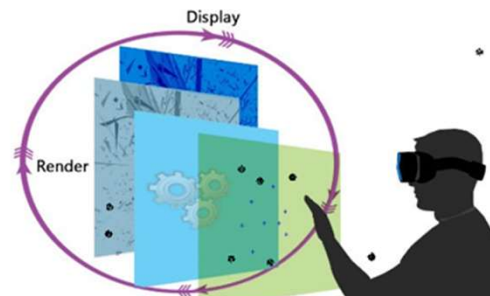

Accessibility: Investigate

Current state of development of AI in Social Sciences

- **Data Analysis and Pattern Recognition:** AI is being increasingly utilized in social sciences for data analysis and pattern recognition. Advanced machine learning algorithms can sift through vast amounts of social data to identify trends, correlations, and patterns that may not be immediately apparent to human researchers.
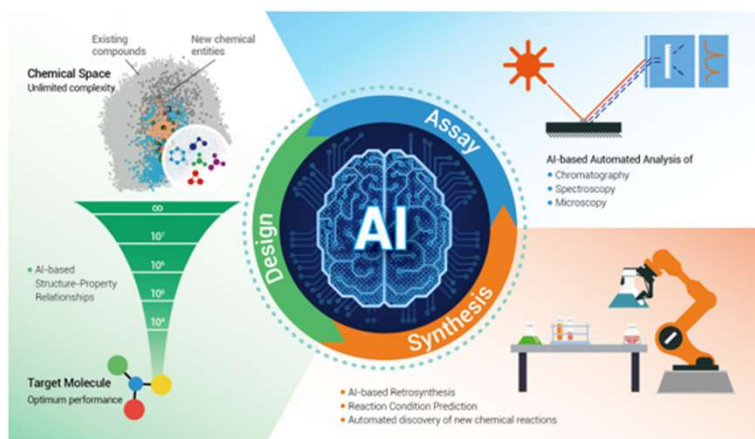
- **Human-AI Collaboration:** There is an increasing trend towards the collaboration between humans and AI in social sciences. AI systems are designed to assist researchers by automating certain tasks, allowing humans to focus on more complex and creative aspects of their work.
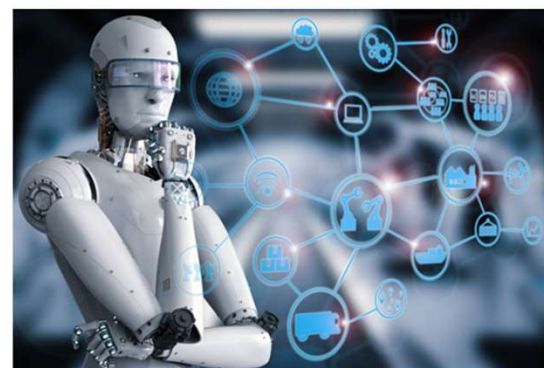
- **Policy and Decision Support:** AI is being employed to provide decision support for policy makers in social sciences. By analyzing data and predicting outcomes, AI tools can assist in designing more effective policies and interventions.

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AI in games development

AI in computer vision and image processing

AI in financial Technology

AI in structural engineering

AI for Environmental condition monitoring

AI for detecting natural disaster

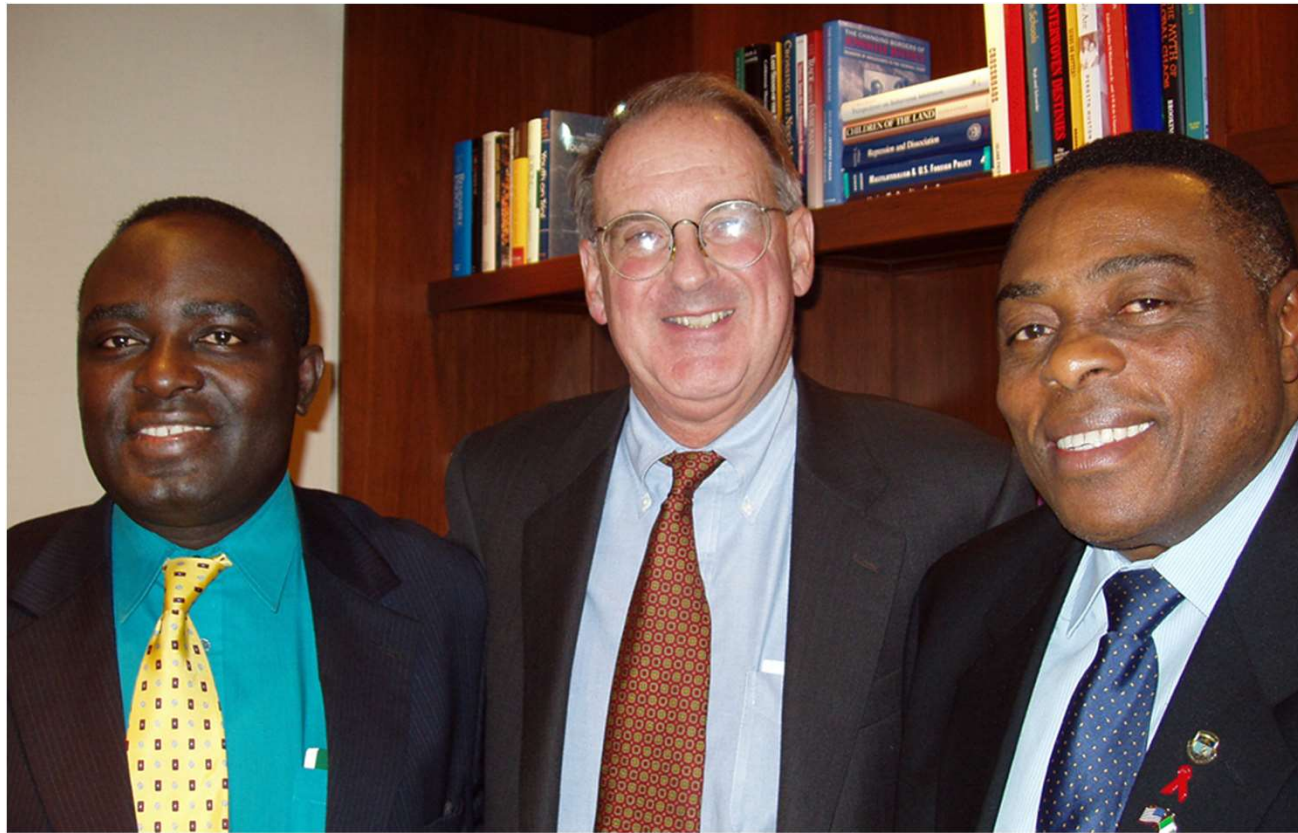AI for weather forecasting

AI for Satellite-based habitat mapping

CONCLUDING REMARKS AND RECOMMENDATIONS

Thank you