

Fourth Data Science School

Artificial Intelligence and Education

Program

November 06th - November 10th, 2023

Institute of Mathematics and Physics (IMSP)

Calcul Bénin

African Center of Excellence in Mathematics, Informatics and Applications

Dangbo, Rép. of Bénin

Main speakers:

- Théophile DAGBA
- John AOGA
- Habib SIDI
- Ratheil Houndji
- Eugène C. Ezin
- Arnaud Ahouandjinou
- Hafiz Tiomoko Ali
- Frejus Laleye
- Roch GLITHO
- Thierry EDOH
- Ghislain Ateazing
- Bonaventure Dossou

Organization committee

- Carlos Ogouyandjou
- Joël Tossa
- Habib Sidi
- Arnaud Ahouandjinou
- Ratheil HOUNDJI
- Ghislain Ateazing
- Pélagie Houngué
- Hénoc Soude
- Jules Dégila

<ul style="list-style-type: none"> ● Jules DEGILA ● Pélagie HOUNGUE 	
<p>Other speakers</p> <ul style="list-style-type: none"> - PhD students (IMSP, applicants to the school) 	



MINISTÈRE
DE L'ENSEIGNEMENT SUPÉRIEUR
ET DE LA RECHERCHE SCIENTIFIQUE
RÉPUBLIQUE DU BÉNIN



Participants

- Educators and Lecturers
- EdTech Entrepreneurs
- AI Industry representatives
- Masters, PhD students
- Young AI researchers
- Representatives of the Ministries of Education

Context

Education faces significant challenges worldwide, particularly in underserved regions. Limited access to quality education, insufficient resources, and a shortage of qualified teachers hinder students' learning and future opportunities. Traditional teaching methods may not suit individual learning needs, leading to disengagement and lower academic outcomes. Additionally, AI's potential in education is limited due to the lack of localized and unbiased training data, affecting students from diverse linguistic and cultural backgrounds. Addressing these issues is crucial to create an equitable and inclusive learning environment, empowering all students to succeed in today's rapidly changing world.

Objectives

The overall objective of this school is to highlight the benefits of using AI in education in order to enhance the quality of the learning experience and teaching material in different languages.

At the end of this school, the participants will be able to :

1. Explain the major innovative approaches around AI for a better education;
2. Identify the challenges of openly available, unbiased and localized training data for underrepresented cultures and languages;
3. Implement at least one use case on AI usage for :
 - Learning experience personalization (including students with special needs),
 - Learning outcomes prediction,
 - Administrative workflows,
 - Resource planning,
 - Curriculum design.
4. Use AI-based approaches for spreading teaching materials to the largest in local languages seamlessly.

Addressed Topics

1. Implement an AI model for notes taking and learning outcome predictions based on silent AI listeners and course materials.
2. Tutorials on LLM models and applications in education
3. Conversational agents for teaching
4. Intelligent tutoring systems (ITS)
5. Dialogue-based tutoring systems (DBTS)
6. AI-driven Personalization for students learning paths
7. Ethical considerations in AI-driven education

Schedule

	Lundi 6/11/23	Mardi 7/11/23	Mercredi 8/11/23	Jeudi 9/11/23	Vendredi 10/11/23
8h - 10h	NLP and applications Théophile DAGBA	<i>Introductory talk on AI and its applications in education</i> Eugène C. Ezin*	Educational Data Mining Pelagie HOUNGUE*	AI and Learning Analytics: Leveraging (Open) Data for Educational Insights Roch Glitho*	Education Data collection architectures. Thierry EDO*
10h - 12h	Demo : Using LLMs conversational agents to produce teaching or research materials. Habib SIDI	Demo/practice : Chat GTP Practice session with presentations by small group. Participants	Basics of LLMs : What is a language model and how is it implemented. Hafiz TIOMOKO ALI	Ethical considerations in AI-driven education (privacy, bias and fairness) Ratheil HOUNDJII	Security challenges in Educational Data Arnaud Ahouandjinou
12h - 14h	Lunch Break	Lunch Break	Lunch Break	Lunch Break	Lunch Break
14h - 16h	NLP applications in education John AOGA	AI applications in a local company Frejus Laleye*	NLP in (African) Language Learning Bonaventure DOSSOU*	Scholarly Knowledge Graph applications Ghislain ATEMEZING	Case Studies of Successful AI Implementation in Education - Focus in Africa Jules DEGILA*
16h - 18h	PhD student presentations	PhD student presentations	PhD student presentations	PhD student presentations	Open discussions and closing marks