Charles Abdoulaye NGOM

Ph.D Student

Montpellier
France
📱 *+33 6 45 53 63 29*
✉ *charles.ngom@inrae.fr*
in *charles-abdoulaye-ngom*
○ *CharlemagneBrain*
iD *0009-0007-4540-4112*
v2VkcZEAAAAJ

Research Interests

NLP, Deep Learning, Machine Learning, Health Crisis, Food Crisis, Risk Factors

Education

2020–2021 **Bachelor's Degree**, *ESP of UCAD*
Description: Bachelor's Degree in Software Engineering and Information Systems.

2021–2023 **Master's degree in AI and Big Data**, *ESP of UCAD*
Thesis: Deep Learning Approaches for Predicting Atrial Fibrillation Risk in Pacemaker Patients

Ph.D Student in Artificial Intelligence

title *Spatial information and Artificial Intelligence to improve crisis monitoring and detection based on textual data*

supervisors Thesis Director : Maguelonne Teisseire, Research Director at INRAE |Thesis Supervisor : Sarah Valentin, Researcher at CIRAD

institution University of Montpellier

starting date November 2024

Publications

[1] M. BA, P. I. THIAM, E. DELAY, C. A. NGOM, I. DIOP, and A. BAH. Deep learning-based land use and land cover changes detection from satellite imagery : a case study of the city of richard toll. In *Proceedings of the 2024 7th International Conference on Machine Vision and Applications*, ICMVA '24, page 60–68. ACM, 2024.

[2] T. D. S. Diagne, M. Ba, A. Sall, F. Toure, I. Fall, K. Diagne, A. Diouf, I. Sene, C. A. Ngom, I. Diop, and A. Bah. Deep learning-based diagnosis of leukemia in africa: Case of acute lymphoblastic and acute myeloid leukemia in senegal. In *Proceedings of Ninth International Congress on Information and Communication Technology*, pages 401–414. Springer Nature Singapore, 2024.

[3] C. A. NGOM, M. BA, S. A. SARR, I. DIOP, A. BAH, and M. DIAO. Data generation strategies for enhanced atrial fibrillation prediction in pacemaker patients. In *2023 First International Conference on the Advancements of Artificial Intelligence in African Context (AAIAC)*, pages 1–10, 2023.

[4] C. A. NGOM, B. Mandicou, S. A. SARR, D. Idy, M. MBAYE, B. Alassane, and D. Maboury. Deep learning approaches for predicting atrial fibrillation risk in pacemaker patients. In *2024 IEEE International Conference on Progress in Informatics and Computing (PIC)*, pages 18–28. IEEE, 2024.

Industry Experience

06/2020– Junior Web Developper, *ESP*, Dakar
11/2020 Internship of end of study of DUT
- Implementation of a recruitment platform (Job-Ads)
- Backend development of the platform in Symfony

06/2021– Backend Developer, *Institut de Recherche pour le Développement(IRD)*, Dakar
12/2021 Design and implementation of a metadata portal in the fisheries sector
- Backend Development and Database Administration
- Software engineering - SCRUM
- Deployment

07/2022– Data Scientist Junior, *Institut de Recherche pour le Développement(IRD)*, Dakar
09/2022 Pre-processing of images and electrocardiogram signals
- Data Analysis
- Preprocessing of Electrocardiogram Images
- Litterature Review, Studies of neural network architectures

10/2022– Deep Learning Engineer, *Institut de Recherche pour le Développement(IRD)*,
08/2023 Dakar
Prediction of AF risk using neural networks
- Exploitation of scientific articles & State of the Art
- Data Generation
- Deep Learning and Machine Learning
- End to End Deep Learning Pipelines with TFX

10/2023– Data Consultant, *DADIX Startup Senegal, NexAI Ivory Coast*, Dakar
08/2024 Using LLMs to chat with Databases
- Working on LLMs, OpenAI Models, Open Source Models like Llama-2, vector databases
- Exploitation of scientific papers about LLMs, Text to SQL models
- Building Business Intelligence Platform

05/2024– Data Scientist, *PAPS*, Dakar
10/2024 Prediction of AF risk using neural networks
- Data Engineering - ETL Process and enhance Product operations
- Building Dashboards for decision making
- NLP, Graphs,Python, MongoDB, Tableau

11/2024– Ph.D Student, *INRAE - UMR TETIS*, Montpellier
11/2027 Textual Analysis to improve and monitor food crisis indicators
- Deep Scientific Research
- Textual Analysis, NER & Relation Extraction
- NLP, LLM, Graphs

Teaching Experience

01/2023 – Introduction to Neural Network and Deep Learning, *GOMYCODE*, Dakar -
10/2023 based in Tunisia
Coaching and Pedagogy with students interested in Deep Learning

01/2023 – Coding with Python, *GOMYCODE*, Dakar - based in Tunisia
10/2023 Coaching with students interested in Python

Programming skills

Programming languages	○ Python ○ C++ ○ PHP	Operating System	○ Ubuntu ○ Windows ○ MAC
Deep Learning Libraries	○ Tensorflow/Keras ○ Tensorflow Extended ○ Pytorch	Machine Learning libraries	○ Numpy / Pandas / Matplotlib ○ OpenCV, Scikit-Image ○ Scikit-Learn
Web Developpement	○ HTML, CSS ○ Symfony ○ FastAPI ○ SQL, PL/SQL ○ MySQL/MongoDB/Postgres	Others	○ Tableau ○ Talend ○ Github & DVC ○ Docker, KVM

Participation in Scientific Events

November/2022	**AI for Health**, *Workshop*, Cheikh Anta DIOP University of Senegal, **ATTENDEE** AI for Health in developing Countries
March/2023	**RAIL WORKSHOP**, *Workshop*, Ecole Supérieure Polytechnique de Dakar, **ATTENDEE**
October/2023	**Deep Learning IndabaX Conference**, *Conference*, Ecole Supérieure Polytechnique de Dakar, GalsenAI & WiMLDS, **SPEAKER**
October/2023	**The First International Conference on the Advancements of Artificial Intelligence in African Context (AAIAC)**, *Conference*, ConAAIAC-2023 in Tanzania, **Presenter**
September/2024	**Deep Learning Indaba 2024 & IJCAI AI for Good Symposium**, *Conference*, DLI-2024 in Dakar, **Attendee & Presenter**

Awards

○ **Second Best Poster at IndabaX Sénégal 2023 event** entitled Atrial Fibrillation Risk Prediction in Pacemaker Patients Using Artificial Intelligence Methods

○ **Deep Learning Indaba Awards : Poster Prize: Scholarships for Data Science Bootcamps (800$) for IndabaX poster and selected at the IJCAI AI for Good Symposium** for the paper entitled Towards One Health: A Systematic Review of AI-Driven Early Detection and Management of Schistosomiasis in Africa

Community Service

2021	GALSEN.AI (The Senegalese community of Artificial Intelligence, Data Science, IoT and Big Data.) - MEMBER
2019	GALSEN.DEV (The community that brings together Senegalese developers with the aim of establishing an ecosystem conducive to the creation and sharing in developer and popularize programming throughout Senegal.) - MEMBER

Last modified: January 2025.