CEDRIC P.-E. MANOUAN

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WORK EXPERIENCE

Research Associate (AI & Robotics Lab) — Summer-Fall 2023
Carnegie Mellon University Africa — Kigali, Rwanda

Graduate Research and Teaching Assistant — Fall 2022 & Spring 2023
Carnegie Mellon University — Remote from Kigali, Rwanda
- Assisting Prof. Bhiksha Raj in 11785 - Introduction to Deep Learning
- Assisting Dr. Moise Busogi in 04800-AB Machine Learning for Earth Observation (ML4EO)
  * Research project in ML4EO supervised by Dr. Moise Busogi:
    Reba: Rethinking Malaria Prevention Through Satellite Earth Observation

Software Engineering/Data science Intern — May 2021 – July 2021
Zindi — Remote from Senegal

Developer Intern (BSc. end project) — April 2019 – June 2019
Project of Digital Solutions for the opening up of Rural Areas and e-Agriculture (PSNDEA)   Abidjan, Côte d'Ivoire

EDUCATION

Master of Science | *Information Technology - Applied Machine Learning* — August 2021 – May 2023
Carnegie Mellon University - College of Engineering — Kigali, Rwanda

Master of Science (Semester 7) | *Information Systems and Software engineering* — October 2019 – March 2020
Ecole Supérieure Africaine des TIC (ESATIC) — Abidjan, Côte d'Ivoire

Bachelor of Science | *Systems, Computer Networks and Telecommunications* — October 2016 – September 2019
Ecole Supérieure Africaine des TIC (ESATIC) — Abidjan, Côte d'Ivoire

SKILLS

Programming - Software/AI Engineering

- Data manipulation and visualization: Pandas, Plotly, Matplotlib, Seaborn
- Machine learning: NumPy, Scikit-learn, Lightgbm, Xgboost
- Deep learning: PyTorch/Lightning, Transformers
- API development: Flask, FastAPI, NodeJS

C++

- Data structures and Algorithms

Bash scripting/task automation

SELECTED PROJECTS

NLP & Robotics - Sequence2Sequence Robotics Transformer 1 | *CMU-Africa* — Fall 2023
PyTorch re-implementation of RT-1 for the generation of actions represented as
sequences of text tokens composed of the parameters to a CRAM generalized action plan.
Project link: Behavioral Episode Model (Seq2Seq RT-1)

Course projects - Recommender Systems | *CMU-Africa* — Fall 2022

- Developed a Content-Based Recommender system for scientific papers as part of my personal project.
  Check project report | Check source code

- Contributed to the development Session-based, Context-aware Recommender System in an Online Travel Domain.
Check Project report

Course project - Data Structures and Algorithms (DSA) | *CMU-Africa*   Fall 2022
Proposed and implemented a solution to the Array merging problem.
Project report: Array Merging

Data science competition - Image classification | *ZINDI*   Fall 2020
Developed a machine learning model to classify Tuberculosis and Normal X-Ray images
for an educational purpose.
Ranking: 7th/104, **Click and look for team DataLabCI on the leaderboard**
Project link: Tuberculosis X-Rays classification

Data science competition - Audio classification | *ZINDI*   Fall 2020
Contributed to the development of a machine learning model to classify audio utterances
in Luganda and English from Uganda.
Ranking: 7th/255, **Click and look for team wakanda on the leaderboard**
Project link: GIZ-NLP-Agricultural-Keyword-Spotter

Data science hackathon - Image classification | *ZINDI*   Fall 2020
Contribued to the development of a machine learning model to identify whether a person in an image
is wearing a face mask or not.
Ranking: 3rd, **Click and look for team TheCIA on the leadernoard**
Project link: Face mask classification

1st prize Hackathon Level 2 (48h) - Image recognition | *ESATIC*   May 2018
Contributed to the development of a deep learning model to recognize West African
bank notes and coins.

1st prize Hackathon Level 1 (24h) - Cryptography | *ESATIC*   May 2017
Contributed to research and writing (in C++) the encryption algorithm behind an executable program.

LEADERSHIP & COMMUNITY INVOLVEMENT

International Conference on Learning Representations (ICLR)   Spring 2023
Volunteered at ICLR 2023, actively contributing to assisting attendees,
and ensuring smooth operations.
Acknowledged with a certificate of appreciation available here.   Rwanda, Kigali

Mastercard Foundation Scholars Program   Fall 2021 - Spring 2023
Completed the Marketplace Readiness Leadership Training Programme.
Check my certificate of completion here.   Rwanda, Kigali

Data Science Club   December 2021 – November 2022
Lead and coordinator   Rwanda, Kigali, CMU-Africa

Data Science Côte d'Ivoire   2020 – Present
Free tutoring for local students/AI enthusiasts   Côte d'Ivoire, remote

Zindi University Ambassador   June 2020 – July 2021
Co-lead of the platform development group (improvements and new ideas)   Côte d'Ivoire, remote

AI & IoT   2019
Co-founder of the Internet of Things and Artificial Intelligence Club   ESATIC, Abidjan, Côte d'Ivoire