

# CEDRIC P.-E. MANOUAN

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## SUMMARY

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Software/Machine learning engineer with a focus on deep learning for over 3 years.  
Experience in deep learning projects for Natural Language Processing and Computer Vision: end-to-end development from data preparation/exploration to model definition and optimization.  
Ability to evolve and work efficiently in a collaborative environment.

## EDUCATION

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<b>Master of Science</b>   <i>Information Technology - Applied Machine Learning</i> Carnegie Mellon University	August 2021 – May 2023 Kigali, Rwanda
<b>Master of Science (Semester 7)</b>   <i>Information Systems and Software engineering</i> Ecole Supérieure Africaine des TIC (ESATIC)	October 2019 – March 2020 Abidjan, Côte d'Ivoire
<b>Bachelor of Science</b>   <i>Systems, Computer Networks and Telecommunications</i> Ecole Supérieure Africaine des TIC (ESATIC) - See degree certificate here	October 2016 – September 2019 Abidjan, Côte d'Ivoire

## WORK EXPERIENCE

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<b>Research Associate</b> Carnegie Mellon University	Summer 2023 Kigali, Rwanda
<ul style="list-style-type: none"><li>Assisting Prof. David Vernon with the realization of the Situation Model Framework in the CRAM Cognitive Architecture using a Joint Episodic-Procedural-Semantic (JEPS) Associative Memory.</li></ul>	
<b>Graduate Research and Teaching Assistant</b> Carnegie Mellon University	Fall 2022 - Spring 2023 Kigali, Rwanda
<ul style="list-style-type: none"><li>Assisting Prof. Bhiksha Raj in 11785 - Introduction to Deep Learning: Natural Language &amp; Audio Processing<ul style="list-style-type: none"><li>* Prepared and Co-Lead the <i>Language Modeling</i> homework assignment in Fall 2022</li></ul></li><li>Assisting Prof. Moise Busogi in Machine Learning for Earth Observation (ML4EO)</li><li>Research in Machine Learning for Earth Observation supervised by Dr. Moise Busogi</li></ul>	
<b>Software engineering/Data science Intern</b> Zindi	May 2021 – July 2021 Remote
<ul style="list-style-type: none"><li>Data science competitions preparation</li></ul>	
<b>Developer Intern (BSc. end project)</b> Project of Digital Solutions for the opening up of Rural Areas and E-Agriculture (PSNDEA)	April 2019 – June 2019 Abidjan, Côte d'Ivoire
<ul style="list-style-type: none"><li>Built an Internet of Things (IoT) system for data acquisition in a cassava field</li><li>Developed a REST CRUD API based on NodeJs and MySQL to store data from both sensors and farmers inputs</li><li>Developed a regression model to predict the yield of a given cassava field based on real-time and stored data</li><li>Deployed the machine learning model to an edge device (Raspberry Pi 3) using tensorflowJS</li></ul>	

## SKILLS

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**Languages:** French (Native), English (Bilingual, Professional)  
**Programming:**

- Python
  - \* Data visualization
  - \* Data manipulation

- \* Machine/Deep learning
- \* Deep learning
- \* API development
- C++
  - \* Data structures and Algorithms

## PROJECTS AND RESEARCH

<b>Course project - Recommender Systems</b>   <i>CMU-Africa</i>	Fall 2022
Developed a Content-Based Recommender system for scientific papers as part of my mini project for 04800-B Intro to recommender systems at Carnegie Mellon university-Africa	
<b>Project link</b> : CBRS for scientific papers	
<b>Data science competition - Image classification</b>   <i>ZINDI</i>	Fall 2020
Developed a machine learning model to classify Tuberculosis and Normal X-Ray images for an educational purpose	
<b>Ranking</b> : 7 <sup>th</sup> /104, <b>Click and look for team DataLabCI on the leaderboard</b>	
<b>Project link</b> : Tuberculosis X-Rays classification	
<b>Data science competition - Audio classification</b>   <i>ZINDI</i>	Fall 2020
Contributed to the development of a machine learning model to classify audio utterances in Luganda and English from Uganda	
<b>Ranking</b> : 7 <sup>th</sup> /255, <b>Click and look for team wakanda on the leaderboard</b>	
<b>Project link</b> : GIZ-NLP-Agricultural-Keyword-Spotter	
<b>Data science hackathon - Image classification</b>   <i>ZINDI</i>	Fall 2020
Contributed to develop a machine learning model to identify whether a person in an image is wearing a face mask	
<b>Ranking</b> : 3 <sup>rd</sup> , <b>Click and look for team TheCIA on the leadernoard</b>	
<b>Project link</b> : Face mask classification	
<b>1<sup>st</sup> prize Hackathon Level 2 (48h) - Image recognition</b>   <i>ESATIC</i>	May 2018
Contributed to the development of a deep learning model to recognize west African bank notes and coins	
<b>1<sup>st</sup> prize Hackathon Level 1 (24h) - Cryptography</b>   <i>ESATIC</i>	May 2017
Contributed to research and writing in C++ the encryption algorithm behind an executable program	

## INTERESTS & COMMUNITY INVOLVEMENT

<b>NLP and Robotics</b>	Spring 2023
Joint Episodic Procedural Semantic Associative Memory	Rwanda, Kigali, CMU-Africa
<ul style="list-style-type: none"> <li>Since Spring 2023, I have been contributing to the JEPSAM project.</li> <li>This project aims to provide an implementation of the Situation Model Framework for the Cognitive Robot Architecture Machine (CRAM) (Beetz et al., 2010).</li> </ul>	
<b>Data Science Club</b>	December 2021 – November 2022
Lead and coordinator	Rwanda, Kigali, CMU-Africa
<ul style="list-style-type: none"> <li>Participants recruitment for Zindi UMOJAHACK 2022 (enrolled 30+ new users)</li> </ul>	
<b>Data Science Côte D'Ivoire</b>	2020 – Present
Free tutoring for local students/AI enthusiasts	Côte d'Ivoire, remote
<b>Zindi University ambassador</b>	June 2020 – July 2021
	Côte d'Ivoire, remote
<ul style="list-style-type: none"> <li>Participating in competitions and hackathons on the platform (username : <b>_MUFASA_</b>)</li> <li>Co-lead of the platform development group (improvements and new ideas)</li> <li>Participants recruitment for UMOJAHACK 2021 (enrolled 15+ new users)</li> </ul>	
<b>Co-founder of the Internet of Things and Artificial Intelligence club</b>	2019
ESATIC	Abidjan, Côte d'Ivoire