

GEDEON MUHAWENAYO

PERSONAL IDENTIFICATION

Full name: GEDEON MUHAWENAYO

Nationality: Rwandan

Date of Birth: 13th March 1996

Address: Kigali-Rwanda

Mobile Phone: +250 788 365 398

Email: gmuhawenayo@aimsammi.org,

Website: <https://gedeonmuhawenayo.github.io>



CAREER SUMMARY

I am a machine learning engineer, with excellent leadership skills and strong interest in satellite images processing and Computer vision. I also like designing and implementing efficient machine learning models to be used in hardware devices. I have experience in managing and leading students associations as well as being a point of contact for scientific bodies.

EDUCATION

African Institute for Mathematical Science / Master's Degree

Sept 2019 - Oct 2020, GHANA

African Masters in Machine Intelligence-AMMI: Funded by Google AI and Facebook AI Residency.

University of Rwanda / Bachelor of Science

September 2015 - July 2019, Rwanda

Bsc. Electronics and Telecommunication Engineering. [Transcripts](#)

PUBLICATIONS

- **Compressed Object Detection**, Authors:Gedeon Muhawenayo and Georgia Gkioxari
Black in AI 2020, collocated with NeurIPS 2020,[Paper\(arXiv\)](#), [Github](#)

PROJECTS ACCOMPLISHED

- **Model compression:** Research project on novel ways of compressing AI models so that they can fit on low memory devices specifically small satellites and IoT nodes.
- **Plantations Diseases Classification**, Classifying pictures of cassava leaves into 1 of 4 diseases or hearth, this is useful in earth observation as it helps to use aerial images to predict plantation diseases.
- **Binarized Graph Neural Network:** A graph convolutional neural network with binary parameters and

activations.

- **LandCover:** a computer vision approach to analyse and recognise major objects from satellite and aerial images
- **Object detection:** an approach of detection objects of interests in satellite and drone images.
- **Signals and Functions analyzer UI:** A desktop app (GUI) for analysing signals and visualization.
- More projects can be found here on my website under the [Projects](#) portal.

WORK EXPERIENCE

- **Rwanda Space Agency / Geospatial Specialist**

Nov 2020 - Present, Kigali, Rwanda

Machine learning for satellite and Aerial images processing.

- **Spectrum AI / Computer vision Intern**

March 2020 - Oct 2020, Remote Internship

Convolutional Neural Networks for Satellite image processing and high dimensionality handling.

- **Techno Engineering Company / Telecom Engineer.**

June 2019 - Oct 2019, Kigali, Rwanda

Computer network planning, configuration and troubleshooting.

VOLUNTEERING

- **AI Exponential:** I was the AI ambassador for Rwanda chapter in 2019/2020, where I organized AI events at both universities and at different innovation hubs.
- **The Giants Electronics:** I was the CEO of one of the biggest students associations at University of Rwanda. Where I organised exhibitions and different tech events inviting both students, professors and people from industries as well as private companies.
- **CVPR2020:** I contributed to the arrangement and testing conferencing Platform, it also allowed me to attend the conference where I got access to some of the state of the art in computer vision.
- **10Academy:** I am a tutor in the Data Science training delivered to selected graduates from Rwanda, Kenya, Ethiopia, Ghana and Nigeria.
- **CanSat_Rwa kit for space outreach in Rwanda:** Can sized satellite to be used as an educational tool of space technology and satellite design. Mainly to be used in weather condition monitoring & forecasting, remote sensing, earth observation, environment, and geo-information sciences experiences.

TRAININGS & CERTIFICATIONS

- **Leadership, Teamwork and Project management:** An online certification on Teamwork, project management and leadership.
- **Machine Learning Summer School:** Statistical Machine Learning and Inference, from fundamental to state-of-the-art.
- **CanSata Leader Training Program (CLTP10):** Small satellites design and implementation, space science and orbit mechanics (Nihon University, Chiba, Japan 2019).
- **HEPTA-Sat training Program:** Hands-on Education Program for Technical Advancement, Cube-sat, nano-satellites design (Kigali, Rwanda 2019).
- **Leadership and ICT Engineering Training Course:** Internet of Things (IoT), Cloud Computing and Remote sensing and Leadership skills by Kobe Institute of Computing via JICA (Japan International Cooperation Agency) (Kigali, Rwanda, 2018).
- **Fiber Optic training workshop:** by Liquid Telecom and KTRN (Korea Telecom Rwanda Networks), covered;

Components of fiber-optic communication, Fiber Splicing, Point to point fiber-optic communication link (installation and Testing), Optical power budget and optical loss measurement, Introduction to OTDR, Passive Optical Network (PON). (Kigali-Rwanda, 2019).

- **Cisco Certified Network Associate (CCNA):** Computer networking, IP addressing, Subnetting and Network Configuration by RDB (Huye, Rwanda, 2017).

COMPETENT SKILLS

Programming & Frameworks: Python, C,C++, PyTorch, OpenCV, Numpy, Pandas, Scikit learn, Detectron2, etc.

Operating Systems: Linux (Debian), Windows.

Cloud Computing: Google Cloud Platform

Version control and collaboration: Git / Github

Scripting and web development Computing: HTML, CSS

Office software: Microsoft office and Libreoffice

REFERENCES

- **Supervisor:** In my masters thesis I worked on models compression with [Georgia Gkioxari](#), a researcher at Facebook AI Residency.
- Teta BAHUNDE, Program Manager at African Masters in Machine Intelligence (AMMI), +250 788 309 332 , tbahunde@aimsammi.org
- Joseph ABAKUNDA, Chief Operations Officer at Rwanda Space Agency, jabakunda@space.gov.rw