Agnes Lynn Ahabwe

Biomedical & Artificial Intelligence Engineer

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PROFESSIONAL SUMMARY

Biomedical and AI Engineer with a strong foundation in Machine Learning and deploying clinical systems, now transitioning into Computational Neuroscience. Utilising a background in signal processing and AI to approach neural data analysis and modeling. Highly motivated to expand foundational knowledge in brain circuits while contributing robust engineering and deployment skills to research environments.

EDUCATION

Carnegie Mellon University   Kigali, Rwanda
Master of Science in Engineering Artificial Intelligence   *Aug 2023 – May 2025*
- **Relevant Coursework:** Machine Learning, Deep Learning, Probabilistic Graphical Models, Computer Vision, Data Analysis, Cognitive Robotics, Principles and Engineering Applications of Artificial Intelligence.
- **Capstone:** An integrated web application for Neo Cafe, featuring a coffee-themed interface with order management, menu display, delivery tracking, and a robust AI-powered chatbot assistant built with Chainlit, Dash and React.

Tech4Dev, Women Techsters Fellowship   Lagos, Nigeria (Remote)
Data Science and Artificial Intelligence Fellowship   *Aug 2022 – Mar 2023*
- Intensive fellowship focused on advanced data science techniques and AI application in emerging markets.

Mbarara University of Science and Technology   Mbarara, Uganda
Bachelor of Biomedical Engineering   *Aug 2016 – Dec 2020*
- **Focus:** Clinical Engineering, Medical Instrumentation, Healthcare Technology Management.

PROFESSIONAL EXPERIENCE

Research Associate   Kigali, Rwanda
Upanzi Network   *Jun 2024 – Dec 2025*
- Managed data collection processes for bi clinical studies (Neurological & Respiratory Monitoring Technologies), ensuring strict compliance with research ethics and data standards.
- Worked with a team on the development of AI models to fix data gaps in African oncology, creating datasets that are FAIR (Findable, Accessible, Interoperable, Reusable) for future healthcare solutions.
- Worked directly with engineering teams, clinicians, and ethics boards to clear administrative blockers and speed up project delivery.
- Built and tested prototypes for sensor-based hardware, taking theoretical research concepts and making them work in the field.

Graduate Teaching Assistant   Kigali, Rwanda
Carnegie Mellon University   *Sep 2024 – Dec 2025*
- Mentored graduate students in Programming for Data Analytics, and Probabilistic Graphical Models, helping build the next generation of technical talent for the region.
- Participated in the redesign of course materials to make complex technical concepts easier to understand and apply to real-world data analytics.
- Created clear documentation and guides to help students deploy code and debug complex errors during their assignments.

Application Specialist   Kampala, Uganda
Delmaw Enterprises Limited   *Mar 2022 – Jun 2023*
- Led the installation and setup of medical systems across multiple hospital departments, especially testing laboratories, helping to modernize clinical operations.
- Created and ran training programs for doctors and technicians, ensuring they knew how to use and maintain the technology independently.
- Worked with hospital administrators to ensure our systems connected smoothly with existing hospital data (interoperability) and met national standards.
- Troubleshot technical issues to keep systems running and ensure reporting accuracy, directly supporting better clinical decisions.

Biomedical Engineer   Kampala, Uganda

Chem-Labs Healthcare   *Feb 2021 – Feb 2022*

- Provided technical support for laboratory equipment across various health facilities, ensuring critical diagnostic services stayed operational.
- Built a centralized client database (Excel-based) to track service history, allowing the team to schedule maintenance before equipment broke down.
- Coordinated with facility managers to plan equipment installations, ensuring seamless integration into the existing hospital layout.
- Trained clinical staff on safe equipment operation to ensure long-term adoption.

Summer Schools & Workshops

Simons Computational Neuroscience Imbizo   Cape Town, South Africa

Intensive Workshop on Neural Data Analysis & Modelling   *Jan 2026*

- Analyzed neural data (Hatsopoulos Reaching Task) using PCA and modeled synaptic plasticity (STDP).
- Collaborated on projects involving the AdEx model and EEG data analysis.
- **Project:** Developed a **Digital Twin** model using Python to simulate neural activity.

TReND CaMinA Computational Neuroscience Summer School   Carnegie Mellon University Africa

Participant   *July 2024*

- Gained hands-on experience in computational modeling of brain circuits and neural data analysis techniques with assistance from material provided by the Allen Institute.

Key Projects

Deep Reinforcement Learning Wargame | *Python, RL Agents*   Jan 2025 – Apr 2025

- Built a tactical wargame using Deep Reinforcement Learning where an AI agent navigates a grid to hit targets while managing limited resources.
- Source: Deep RL Veto Wargame

AMEX Healthcare Digital System Analysis | *Data Analytics, ML*   Feb 2023

- Designed a digital health adoption study, managing data collection across multiple African cities to see if the infrastructure was ready for deployment.
- Collaborated remotely with a team of ladies from across Africa; Nigeria, South Africa and Ghana, proving ability to deliver work across borders and time zones.
- Used machine learning to analyze how socioeconomic factors affect whether patients will use mobile health platforms.

Conferences & Presentations

Global Digital Health Forum   Nairobi, Kenya

Project Representative   *Dec 3 – 5, 2025*

- Presented findings on "Bridging Data Gaps in Oncology: A Multimodal AI Pipeline for Generating FAIR Breast Cancer Datasets in Africa"," highlighting the use of AI to address data disparities in African healthcare.
  Source: Bridging Data Gaps in Oncology.

AFRETEC Network Annual Conference   Dakar, Senegal

Poster Presenter   *Oct 20 – 22, 2025*

- Presented poster: "Addressing Biases in Neurological and Respiratory Monitoring Technologies in Africa" at Université Cheikh Anta Diop de Dakar.
  Source: Addressing Biases in Neurological and Respiratory Monitoring Technologies in African Population.

Africa HealthTech Summit   Kigali, Rwanda

Poster Presenter   *Oct 14 – 15, 2025*

- Presented two posters regarding oncology data gaps and neonatal care:
- **Poster 1:** Bridging Data Gaps in Oncology: A Multimodal AI Pipeline for Generating FAIR Breast Cancer Datasets in Africa.
  Source: Bridging Data Gaps in Oncology.
- **Poster 2:** HumekaFL: Automated Detection of Neonatal Asphyxia Using Federated Learning.
  Source: HumekaFL.

Volunteering & Leadership

The Mindful Project (Mastercard Foundation) Kigali, Rwanda
Volunteer / Mental Health Advocate *Jan 2024 - Mar 2025*
- Spearheaded initiatives to raise mental health awareness among the student body, organizing workshops and support sessions.
- Collaborated with the Mastercard Foundation to ensure resources reached students effectively.

Honors & Awards

Simons Foundation | *Simons Computational Neuroscience Imbizo* Jan 2026
- Received full funding (travel, accommodation, and tuition) to attend the prestigious Simons Computational Neuroscience Imbizo in Cape Town, South Africa.

Mastercard Foundation Scholar | *Mastercard Foundation* Aug 2023 – May 2025
- Awarded full scholarship for Master of Science in Engineering AI at Carnegie Mellon University based on academic excellence and leadership potential.

Technical Skills

Spoken Languages: English (Native/Professional)
Programming Languages: Python, SQL, LaTeX
Machine Learning & AI: Sci-kit learn, SciPy, Keras, PyTorch, TensorFlow, OpenCV, LangChain, NLTK, LLMs
Cloud & DevOps: Google Cloud Platform (GCP), Amazon Web Services (AWS), Docker (CLI), AIOps
Data Science: NumPy, Pandas, Matplotlib, Flask, Chainlit
Deployment: System Installation & Configuration, Workflow Optimization, Diagnostics