

Olivier Kanamugire

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EDUCATION

Aug. 2024 – July 2025	MSc. Data-Centric Engineering (Computer Vision & Pattern Recognition) <i>Lappeenranta University of Technology, Lappeenranta, Finland</i> Thesis: Learning Latent Representations for Diabetic Retinopathy Progression (https://lutpub.lut.fi/handle/10024/170148).
Aug. 2023 – June 2024	MSc. Mathematical Sciences (Data Science) <i>African Institute for Mathematical Sciences (AIMS), Kigali, Rwanda</i> Thesis: Advanced Deep Learning for Malaria Detection Using a Microscope
Nov. 2019 – April 2023	BSc. Mathematics (Applied Mathematics), <i>University of Rwanda – College of Science and Technology, Kigali, Rwanda</i> Thesis: Theory of Generalized Functions for Analyzing Cauchy Problem of the Wave Equations

RESEARCH AND TEACHING EXPERIENCE

Nov. 2025 – Present	Teaching Assistant <i>African Institute for Mathematical Sciences (AIMS), Rwanda</i> <ul style="list-style-type: none">- Support graduate courses in programming and data analysis- Assist in grading, tutorials, and academic quality assurance- Assist students on research projects and master's theses
Dec. 2024 – Present	Malaria research <i>In collaboration with Malaria research team at Carnegie Mellon University-Africa</i> Topic: Comparative analysis of deep learning models for malaria parasite detection and classification. My contribution: Interpretability of deep learning models

RESEARCH INTERESTS

- Mathematics for machine learning
- Machine learning for biomedical research
- Multimodal machine learning
- Statistical Learning and Bayesian Analysis
- Computer Vision
- Modeling with PDEs.

TECHNICAL SKILLS & LANGUAGES

- Programming:** Python, MATLAB, R
Computational: Git, Linux, LaTeX, High-Performance Computing
Software dev.: Swift, Dart, Flutter
Languages: English (C1), French (A2), Spanish (A1)

SELECTED PROJECTS

- Estimation of posterior distribution (<https://github.com/OLIVIERKANAMUGIRE/Updating-beliefs-on-a-disease---A-bayesian-approach>).
- Diabetic Retinopathy Progression Prediction (<https://github.com/OLIVIERKANAMUGIRE/DR>).
- Coin Detection Using Computer Vision (<https://github.com/OLIVIERKANAMUGIRE/Coin-Detection-Using-Computer-Vision>).
- Price forecasting of stocks (<https://github.com/OLIVIERKANAMUGIRE/Forecasting-The-Stock-Prices-For-AAPL-Stocks>).

HONNORS AND AWARDS

- Certificate of Achievement, IOS App Development Using Swift, AIMS-Rwanda (2025)
- Exceptional Respect and Value Award, AIMS Rwanda (2024)
- Certificate of Merit – Outstanding Academic Performance, University of Rwanda (2023)
- Honorable Mention Diploma, Open Mathematical Olympiad for University Students (2022)
- Silver Honors & National Award, International Math Youth Challenge (2021)

REFERENCES

Professor Lasse Lensu

Lecturer of Machine Vision and Data Analysis

Lappeenranta University of Technology, Lappeenranta, Finland.

Relationship: He was my lecturer in Pattern Recognition and Machine Learning, and main supervisor of my Master's thesis.

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Professor Blaise Tchapnda

Academic Director

African Institute for Mathematical Sciences, Kigali, Rwanda

Relationship: He is currently my employer and was my lecturer in Ordinary Differential Equations Course.

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Professor Ernest Fokoue

Professor of Statistics

Rochester Institute of Technology, New York, USA

Relationship: He was my lecturer in Statistical Machine Learning and I was his assistant in the statistical machine learning course in 2025 AIMS cohort.

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