









Summary

I am an enthusiastic problem-solver with a deep passion for mathematics and computer science. I enjoy learning and tackling challenges that require me to apply my interpersonal skills and technical skill, as well as those that provide opportunities for personal growth. Moreover, I am always ready to face any challenges.




Educations

 Stellenbosch University, South Africa MSc. in Machine Learning and Artificial Intelligence Relevant courses: Mathematics for Machine Learning, Foundation of deep Learning, Computer Vision, Probabilistic Modelling, Natural Language Processing, Reinforcement Learning, Optimization for Machine Learning	Jan. 2024 – Nov. 2024
 Faculty of Science, University of Fianarantsoa, Madagascar MSc. in Mathematics and Applications – Fundamental Mathematics Relevant courses: Graph Theory, Artificial Intelligence, Numerical Analysis, Optimization, Distribution and PDEs, Stochastic Simulation, Combinatorics, Algebra	Jun. 2019 – Jan. 2024 Grade: 14.25/20
 African Institute for Mathematical Science, Limbé Cameroon MSc. in Mathematical Sciences – Fundamental Sciences Relevant courses: Statistical Inference, Numerical Analysis with Python, Algebraic Geometry, Cryptography, Quantum information theory	Sep. 2022 – Jun. 2023 Grade: 3.52/4
 Faculty of Science, University of Fianarantsoa, Madagascar BSc. in Mathematics and Application – Fundamental Mathematics Relevant courses: Linear Algebra, Algebra, Analysis, Algorithm, Probability, Statistics, Topology	Nov. 2015 – Apr. 2019 Grade: 14.83/20
 Baccalaureate in Technology in Industrial Engineering Technical High School Beravina Fianarantsoa, Madagascar. Relevant courses: Automation, Material resistance, Industrial draw	Sep. 2012 – Jul. 2015 Grade: 13.08/20

Publication and Talks

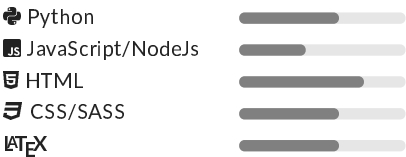
-  Florian Luca and Jean Lucien Randrianantenaina, “There Is No Carmichael Number of the Form $2^np^2 + 1$ with p prime”, INTEGER, Volume 23 (2023) 
-  Talk at AIMS Cameroon, 2023: “Fermat last theorem, with $n=4$ ” Presented to AIMS Cameroon students. Supervised by Prof. Dr Hans Georg Rück, Universität Kassel.

Research Experiences

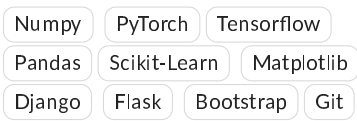
-  Optimizing U-net architecture for brain tumour segmentation, using Genetic Algorithm (Msc. Thesis) 2023
Proposed and implemented a genetic algorithm approach to optimize hyperparameters of the U-net architecture for improved brain tumour segmentation accuracy.
Supervisor: Dr Aurelle Tchagna Kuanou (U. of Buea Cameroon) and Dr Joelson Randriamparany (U. Fianarantsoa)
-  Carmichael Number (Msc. Thesis) 2023
Investigated the properties of Carmichael Numbers and proved the non-existence of a Carmichael Number of the forms $2^np + 1$, with p prime.
Supervisor: Prof. Florian Luca (U. of Wits, South Africa)
-  Radical resolution of a polynomial Equation (BSc. Project) 2019
Exporation of radical resolution method and explaining why there is no general formula to solve a polynomial equation of degree higher than five.
Supervisor: Prof. Solo Randriamahaleo (U. of Fianarantsoa)

Skills

Programming















Library/Framework/Versioning



Language







Projects

-  **Movie Recommender System**  Feb. 2024
Large-scale recommender system, using probabilistic matrix factorization and trained on the 25M MovieLens dataset
-  **MK-Forum**  2023
Creation of a forum dedicated to mathematics, using HTML, CSS/Bootstrap, and JS for the front end, and Python/Django and MySQL for the back end. The project includes user account management, posts, comments, and a voting system.
-  **FCryptos**  2023
Implementation of various cryptographic systems using Python, like Shift cypher, Vigenere cypher, SPN, RSA, and ENIGMA machine.
-  **Unbeatable TicTacToe**  2022
Implementaion of the Tic-Tac-Toe game using HTML, CSS and JavaScript. It has an automated computer player that uses a combination of random placement and min-max algorithm to make each move depending on the chosen level.
-  **Pendu Malagasy**  2022
Implementation of the hangman game using Tkinter an Python. The list of words is Malagasy by default but can be changed easily.
-  **Bellman Kalaba GUI**  2021
Implemation of a graphical interface for graph representation and short-path finder with the Bellman-Kalaba algorithm with Tkinter/Python.

Certifications

- ★ **Business Management (One month)** Jully 2023
ESMT Berlin, II Africa, IIP – Limbé, Cameroon
One moth of intensive course for Business managements, and soft skills developements.
- ★ **Back-end developer (Six months)** Jan. – Aug. 2022
SAYNA & OIF: DCLIC Program 1.0 – Fianarantsoa, Madagascar
Six months course of website developpents: HTML5, CSS3, JavaScript, NodeJs, MySQL.

Prizes/Awards/Scholarships

-  Fully funded Master's Program in ML and AI: DeepMind Scholarship. 2024
-  Industry Immersion Program (IIP) Scholarship: AIMS, II Africa, ESMT Berlin. 2023
-  Fully Funded Master's Program, AIMS Cameroon: Mastercard Foundation in Cameroon. 2022
-  Fully Funded D-CLIC 1.0 Programs: SAYNA the Organisation International et de la Francophonie (OIF). 2022

References

- Prof. Florian Luca, School of Mathematics.
Univesity of the Witwatersrand, South Africa,
+270 117 176 243,
florian.luca@wits.ac.za
- Dr Aurelle Tchagna Kuanou, College of Technology
University of Buea, Cameroon
+237 696 263 641
tchagna.aurelle@ubea.cm
- Dr Joelson Randriamparany, Department of Mathematics and Applications
Faculty of Sciences, University of Fianarantsoa, Madagascar
+261 343 731 768
Joelson.randriam@gmail.com
- Prof. Andreas Buchleitner, Department for Quantum Optics and Statistics
Institute of Physics Albert-Ludwigs, Universität of Freiburg, Germany
+49 761 203 5830
a.buchleithner@physik.uni-freiburg.de