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Mathematicians, AI Enthusiast

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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

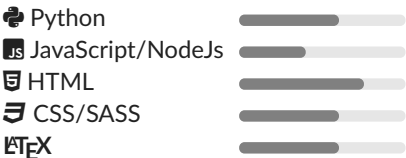
-  Florian Luca and Jean Lucien Randrianantenaina, “There Is No Carmichael Number of the Form  $2^np^2 + 1$  with  $p$  prime”, INTEGER, Volume 23 (2023) 
-  Talk at AIMS Cameroon, 2023: “Fermat last theorem, with  $n=4$ ” Presented to AIMS Cameroon students. Supervised by Prof. Dr Hans Georg Rück, Universität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

Research Experiences

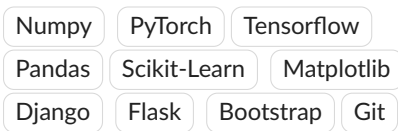
 Optimizing U-net architecture for brain tumour segmentation, using Genetic Algorithm (Msc. Thesis) Proposed and implemented a genetic algorithm approach to optimize hyperparameters of the U-net architecture for improved brain tumour segmentation accuracy. Supervisor: Dr Aurelle Tchagna Kuanou (U. of Buea Cameroon) and Dr Joelson Randriamparany (U. Fianarantsoa)	2023
 Carmichael Number (Msc. Thesis) 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)	2023
 Radical resolution of a polynomial Equation (BSc. Project) 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)	2019

Skills

Programming



Library/Framework/Versioning















Language



## Projects

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-  **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, Vingenere 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  
Implementation of a graphical interface for graph representation and short-path finder with the Bellman-Kalaba algorithm with Tkinter/Python.





## Certifications

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- ★ **Business Management** Jully 2023  
ESMT Berlin, II Africa, IIP – Limbé, Cameroon  
One moth of intensive course for Business managements, and soft skills developements.
- ★ **Back-end developer** 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

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

## References

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- Prof. Florian Luca, School of Mathematics.  
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- Prof. Andreas Buchleitner, Department for Quantum Optics and Statistics  
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