

# Jean Lucien Randrianantenaina

## Mathematicians, Machine Learning

🏠 7 Papegaai, Stellenbosch, South Africa  
✉ rjlucienaina@gmail.com  
🌐 fahazavana.github.io

☎ +27 625 924 553  
🌐 Jean Lucien RANDRIANANTENAINA  
🌐 Fahazavana

## 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 know-how, as well as those that provide opportunities for personal growth. Moreover, I am always ready to face any challenges.

## Educations

- |  |                       |
|--|-----------------------|
| 🎓 <b>MSc. in Machine Learning and Artificial Intelligence</b><br>Stellenbosch University, South Africa   | Jan. 2024 – Nov. 2024 |
| 🎓 <b>Msc. in Mathematical Sciences – Fundamental Sciences</b><br>African Institute for Mathematical Science, Limbé Cameroon<br>CGPA: 3.52/4                        | Sep. 2022 – Jun. 2023 |
| 🎓 <b>MSc. in Mathematics and Applications – Fundamental Mathematics</b><br>Faculty of Science, University of Fianarantsoa, Madagascar<br>Overall average: 14.25/20 | Jun. 2019 – Jan. 2024 |
| 🎓 <b>Bsc. in Mathematics and Application – Fundamental Mathematics</b><br>Faculty of Science, University of Fianarantsoa, Madagascar<br>Overall average: 14.83/20  | Nov. 2015 – Apr. 2019 |
| 🎓 <b>Baccalaureate in Technology in Industrial Engineering</b><br>Technical High School Beravina Fianarantsoa, Madagascar<br>Overall average: 13.08/20             | Sep. 2012 – Jul.2015  |

## Publication and Talks

- 📄 Florian Luca and Jean Lucien Randrianantenaina, "There Is No Carmichael Number of the Form  $2^n p^2 + 1$  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

- |  |      |
|--|------|
| 🔧 <b>Recomender System on the 25M and 100k MovieLens dataset (Report)</b>  | 2024 |
| Building a movie recommender system using Matrix Factorisation with Python/Numpy/Scipy. Exploration of algorithm like ALS, SGD, BPR.   |      |
| 🔧 <b>Optimizing U-net architecture for brain tumour segmentation, using Genetic Algorithm (Msc. Thesis)</b>  | 2023 |
| Proposing the usage of genetic algorithm to optimize the hyperparameters of the U-net Architecture.<br>Supervisor: Dr Aurelle Tchagna Kuanou (U. of Buea Cameroon) and Dr Joelson Randriamparany (U. Fianarantsoa) |      |
| 🔧 <b>Carmichael Number (Msc. Thesis)</b>   | 2023 |
| Exploring the concept of Carmichael Numbers and proving the non existence of a Carmichael Number of the form $2^n p + 1$ , with $p$ prime.<br>Supervisor: Prof. Florian Luca (U. of Wits, South Africa)            |      |
| 🔧 <b>Radical resolution of a polynomial Equation (BSc. Project)</b>  | 2019 |
| Exporation of radical resolution method and explaining why there is no general formula to solve a polynomial equation of degree higher than five.<br>Supervisor: Prof. Solo Randriamahaleo (U. of Fianarantsoa)    |      |

## Skills




### Programming

Python R SageMath  
JavaScript MySQL HTML  
CSS  $\text{\LaTeX}$











### Library/Framework/Runtime

Numpy Scipy Pandas  
Scikit-Learn Tensorflow  
Matplotlib Django Flask  
Bootstrap NodeJs

### Language

 English ● ● ● ● ● ●  
 French ● ● ● ● ● ●  
 Malagasy ● ● ● ● ● ●





## Personal Projects

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


## Extracurricular

- ★ **Business Management (One month)** 2023  
ESMT Berlin, II Africa, IIP – Limbé, Cameroon
- ★ **Back-end developer (Six months)** 2022  
SAYNA & OIF: DCLIC Program 1.0 – Fianarantsoa, Madagascar
- ★ **Probabilistic and statistical modeling in epidemiology and environment** 2021  
CIMPA – Fianarantsoa, Madagascar

## 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 Program: SAYNA and International Organization et de la francophonie (OIF). 2022

## Interests

-  Hiking, Football, Guitar, Malagasy AI