Jean Lucien Randrianantenaina
Mathematicians, Machine Learning

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Sumary

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

🎓 **MSc. in Machine Learning and Artificial Intelligence**   **2024**
Stellenbosch University, South Africa

🎓 **Msc. in Mathematical Sciences – Fundamental Sciences**   **2022 – 2023**
African Institute for Mathematical Science, Limbé Cameroon
CGPA: 3.52/4

🎓 **MSc. in Mathematics and Applications – Fundamental Mathematics**   **2019 – 2023**
Faculty of Science, University of Fianarantsoa, Madagascar
Overall average: 14.25/20

🎓 **Bsc. in Mathematics and Application – Fundamental Mathematics**   **2015 – 2019**
Faculty of Science, University of Fianarantsoa, Madagascar
Overall average: 14.83/20

🎓 **Baccalaureate in Technology in Industrial Engineering**   **2012 – 2015**
Technical High School Beravina Fianarantsoa, Madagascar
Overall average: 13.08/20

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

⚗ **Recomender System on the 25M and 100k MovieLens dataset (Report)**   **2024**
Building a movie recommender system using Matrix Factorisation with Python/Numpy/Scipy. Exploration of algorithm like ALS, SGD, BPR.
Lecturer: Dr Ulrich Paquet (AIMS South Africa)

⚗ **Optimizing U-net architecture for brain tumour segmentation, using Genetic Algorithm (Msc. Thesis)**   **2023**
Proposing the usage of genetic algorithm to optimize the hyperparameters of the U-net Architecture.
Supervisor: Dr Aurelle Tchagna Kuanou (U. of Buea Cameroon) and Dr Joelson Randriamparany (U. Fianarantsoa)

⚗ **Carmichael Number (Msc. Thesis)**   **2023**
Exploring the concept of Carmichael Numbers and proving the non existance of a Carmichael Number of the form $2^n p + 1$, 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

Python | R | SageMath
JavaScript | MySql | HTML
CSS | LaTeX

Library/Framework/Runtime

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

Language

🇬🇧 English ● ● ● ● ○ ○
🇫🇷 French   ● ● ● ● ○ ○
🇲🇬 Malagasy ● ● ● ● ● ●

Personal Projects

MK-Forum 🔗   **Continuous Project**

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**

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

Extracuricular

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