African Institute for Mathematical Sciences (AIMS)-Cameroon
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Nji Ruth Mbikang

Profile

I am a dedicated student with a Master of Technology degree in Mechatronics Engineering from the University of Buea, (UB) in Cameroon. I possess strong analytical skills, valuable research experience, and a commitment to academic excellence with my interest in Mechatronics systems, Agriculture/Climate and Management/Leadership.

Education

2023-Present **Scholar of Master of Science, Mathematical Sciences** , *African Institute for Mathematical Science (AIMS)*, Cameroon, **Relevant courses are:**
Mathematical Problem Solving, Python, SageMath, Linear Algebra, Ordinary Differential Equations, Physical Problem Solving and Data Science, Quantum Computing, RegCM Modeling, Atmospheric Physics, Climate Modeling, Machine Learning, and Big Data Analytics.

2021-2023 **Master in Technology**, *University of Buea (UB)*, Cameroon, **Relevant courses are:**
Artificial Intelligence, MicroMechatronics Systems, Computational Techniques and Programming, Advanced Microprocessors and Microcontrollers, VLSI Technology, Internet of Things, Robotics Design, Wireless communication, Mechantronics Design, Advanced Control Systems, and Entrepreneurship.

Second Class Upper

Volunteering Work

1. Did a two days Clean up event in the Northwest part of Cameroon, where I partook in cleaning the street and the dumpsite, followed by sorting the plastic waste for plastic pavement formation.
2. Trained secondary school students(Form 1,2 and 3) in Scratch programming and understanding of the hardware components of the Arduino kit.
3. Participated in the Cleanup campaign of the bus station and water catchment site in Buea.

Workshops and Activities

Dec 2023 **Presenter**, AIMS-Cameroon, World AIDS Day 2023. Presented on the theme: Let Communities Lead. Created awareness on HIV and AIDS, what they are, how they are transmitted, prevented, and how to handle infected persons.

Research and Projects

1. ***Usage of Electromagnets as a replacement for hydraulic brakes in cars***: Utilized surveys, interviews, Designed and implemented an Electromagnetic Braking System in cars. I was able to achieve a hardware system that does not rely on friction for brakes, hence, less wear and tear of brake discs, less pollution and this enabled me complete a Bachelors in Technology.(*2021, Bachelors in Technology project*)
2. ***Automatic Monitoring of Environmental Factors Affecting Crop Growth***: Prepping the field, planting the crop, collecting data, harvesting, and building a relationship between them were the main steps involved in this work while doing continuous studies and research. I was able to come up with a device to monitor the environmental and soil parameters of the site and reached a conclusion on how they influence the crop.. (*2023, Automatic Monitoring device for crops for my Masters dissertation.*)
3. ***Developed an automated system for analyzing microscopic fungal infections using TensorFlow and OpenCV, streamlining diagnosis in African communities (Chad as case study)***. Implemented image resizing, translation, and augmentation techniques, ensuring dataset quality and diversity. Split the dataset for training, validation, and testing, maintaining class balance, and used TensorFlow for real-time data augmentation, demonstrating expertise in image analysis and healthcare applications. (*2023, Data Pre-processing group mini project*)

Skills

Programming Languages	Matlab programming (Intermediate), Python (Intermediate), SageMaths (Intermediate), LaTeX for presentation (Advanced), Arduino Programming (Advanced)
Developer Tools	HTML, CSS, JAVASCRIPT
Soft Skills	Communicative, Intuitive, Team player, Good Presenter

Language

English	Fluent
French	Intermediate