Isaac Thani MOSES

itmoses@andrew.cmu.edu thanimosesisaac3@gmail.com +250 798-287-781 isaacthani Zikt

Profile

I am a research and engineering professional specializing in robotics, AI, and applied machine learning, with a keen interest in the research and development of innovative solutions. I am passionate about advancing cutting-edge technologies that address real-world challenges in healthcare, manufacturing, and beyond.

Education

Master of Science in Electrical and Computer Engineering
Carnegie Mellon University, Kigali, Rwanda *August 2023 - May 2024*
Coursework: Humanoid Robotics, Cognitive Robotics, Machine Learning, Data Structures and Algorithms, Applied Stochastic Processes, Augmented & Virtual Reality, Managing Technology and Innovation

Bachelors of Science in Electronics and Nanoelectronics
Kazan State Power Engineering University, Kazan, Russia *September 2015 – July 2019*
Thesis: Development of a Real-time Data Collection System using Raspberry Pi and Arduino

Coursework: Power Electronics, Circuit Design, Microcontrollers, Mathematical Physics, Philosophy,Project Management

Professional Experience

Research Associate **June 2024 - Present**
CyLab-Africa/Upanzi Network *Kigali, Rwanda*
- I am working on the "Addressing Biases in Neurological and Respiratory Monitoring Technologies for African Populations" project in collaboration
- Currently exploring biophysics-informed AI solution + hardware redesign to address bias in EEG and PulseOximeters

Teaching Assistant, Bridge Program **September 2023 - March 2023**
Carnegie Mellon University Africa *Kigali, Rwanda*
- I am providing technical and Academic support to Undergraduate students preparing for graduate school
- Supported a cohort of 40 students through their applications

Cambridge KS2 Teacher, Project Manager **March 2022 – June 2023**
BC Academy Cambridge International School *Kazan, Russia*
- I taught the Cambridge Program, planned and conducted STEM-Language collaborative lessons and also supported Internal IT Project.
- I was awarded as one of the outstanding employees of the year.

Co-founder and Product Manager **December 2021 – December 2022**
Kwiberry.com *Remote*
- I managed product and business development for our marketplace
- I built customer and merchant base from 0 to 500 and 15, facilitated Shipment to 10 cities in 3 countries

Senior Specialist, Sales & Customer Success **February 2021 – February 2022**
Remofirst.com *Remote*
- I was responsible for customer acquisition, then moved to customer on-boarding and success as well as employee training.
- I managed customer accounts in 30 countries

Electronics Engineering Intern **October 2017 – September 2018**
TEKO Security Systems *Kazan, Russia*
- I worked in the Electronics division on IoT connection module
- Learnt Circuit Design Working with VMs and Custom ESP8266 for IoT

Undergraduate Research Student, Project Manager **September 2017 – June 2019**
Microprocessor Lab, Kazan State Power Engineering University *Kazan, Russia*
- Worked on Ultrasonic Sensors for Navigation, Presented findings at International Conferences

Skills and Certifications

Technical/Tools: C/C++, Python(Pytorch, Tensorflow, Numpy), ROS, Lisp, SQL,Circuit Design, CAD - Fusion 360
Research Skills: Mathematics and statistics, understanding of research papers, experimental research, Effective collaboration, technical and research writing, presentation skills
Other Professional Skills: Project/Product Management, Sales, Business Development
Certifications: Intro to Machine Learning, Intro to Deep Learning, Computer Vision with OpenCV, Product Analytics, System Analytics, Business Development
Others: Languages - English, Hausa(Native), Russian(full working proficiency), French(limited working proficiency) / Hobbies: Running, Hiking, Travelling

Selected Projects

Theory of Mind for Robots using Behavior Trees | *Ongoing Course Project* **2024**

- This research aims to integrate theory-of-mind constructs with behavior trees to enable robots to dynamically adapt their behavior based on inferred human states, enhancing their capability for intuitive, adaptive interactions in social human-robot interaction scenarios. Course project for Principles and Engineering Applications of AI Principles

Ethically Responsible Human-Robot Interaction | *Eva Robot, Humanoid Robotics Grand Challenge* **2023**

- This project explored integrating ethical frameworks into human-robot interactions to guide robot decision-making. Models were trained on ethical datasets and tested in a Unity simulation with a humanoid robot character. The project won Prof. Conrad Tucker's grand challenge for his Humanoid Robotics and Cognition course at Carnegie Mellon University Africa in 2023 and is currently being expanded for publication.

Ray Tracing using MinilibX | *C/C++, Linux, MinilibX MiniRT* **2021**

- The goal of the project was to generate images using the Raytracing protocol. The computer generated images represented a scene as seen from a specific angle and position, defined by simple geometric objects, and each with its own lighting system.

Delat 3D Printer | *CAD, Circuit Design, Project ManagementYoutube Video* **2018**

- We designed a safe and affordable 3D printer for use by hobbyist and learners

Multi-Powered Lawn Mover | *Electronics, Metal Fabrication, Solar Panels* **2012**

- We designed an Ecological, Solar-Powered Lawn Mower and Hedge Cutter as a High School group project. this won a Silver Medal at the Eskom Expo in South Africa

Scholarships and Awards

MasterCard Foundation Partial Scholarship | **2023**

- Awarded for MS Electrical and Computer Engineering studies at Carnegie Mellon University Africa.

BC Academy Outstanding Employee | **2022 -2023**

- Awarded for excellent contribution to the organization's initiatives and activities.

Rector's Award for Excellence in Academics,Research and Community Development | **2016 - 2019**

- 3-time recipient of the Rector's Awards for Outstanding Academic Performance and Community Service for student leadership and Mathematics, Electronics, Russian Studies Olympiads

Best International Student 2018 | **2018**

- One of best students in the university, 2018 - 2019 session Article from Kazan State Power Engineering University

Honorary Diploma of 1st Degree | Awarded for best student presentation(Industrial Electronics Section) Link **2018**

- International Youth Conference on Radio Electronics, Electrical and Power Engineering (REEPE)

Nigeria - Russia BEA Undergraduate Scholarship | **2014 - 2019**

- Selected as one of the Bilateral Education Agreement Russia Undergraduate Scholars 2014-2019 based on Weat Africa Senior School Certificate Performance and a rigorous selection exams and interview

Silver Medal & Kevin Ward by US Embassy in South Africa | *Eskom Expo for Young Scientists, Johannesburg* **2012**

- We presented a team project, the ecologically-friendly Multi-Powered Lawn Mower and Hedge Cutter which won two awards

Leadership & Service

Chairperson, Nigerians in Diaspora Organization(NIDO) Kazan | *NIDO Russia* **2020 - 2023**

- Organized community events aimed at introducing other nationals to Nigerian Culture and also helping Nigerians better adapt to Life in Kazan, Russia.

President, Union of International Undergraduate and Postgraduate Students | **2018 - 2019**

- Represented Internationals at the University and City Student Council, helped new students adapt to Life in a new Culture and University System

Volunteer Recruiter and Section Assistant, World Festival of Youth and Students, Sochi | *WFYS Archive* **2017**

- I conducted interviews and recruited volunteers for the World Youth Student Festival 2017 that attracted more than 25k Youth from 190 Countries held at the Olympic Village near the Black Sea in Sochi, Russia

Volunteer STEM Teacher | *The Gambia Academy* **2017**

- I taught STEM to talented Music students at Sona Jobarteh-Founded Music School