JIM MURIUNGI GITONGA

Detail-Oriented Bio-Medical Engineer/Software Developer with 1.5 years of experience in small software design for my projects (hardware based) and helping final year engineering students program their projects and test them. Also competed in African Biomedical Design Consortium (ABEC) in 2019 and emerged the best with the best medical model. Also, after finishing my form four I was called back to my former high school to be a peer teacher for 6 months. And am a self-taught programmer with high thirst for knowledge. For last 3yrs I have learnt C, Python and JavaScript (MERN STACK+ HTML5 REACT&REACTNATIVE). When Covid19 came I was called back by the university to aid in design of a ventilator. I and my colleagues designed and built it from the scratch in 3 months' time.

CONTACT

+254 701632642

jimgitongajm@gmail.com

Nairobi, Kenya

Linkedin.com/jimgitonga-ab7325120

SKILLS

Back-end developer (NODEJS)
Mobile developer (REACT)
Problem Solving
Design Thinking
Data analytics (PYTHON)
Circuit Design (KICAD)
Project Management
Critical thinking

ACHIEVEMENTS

Award winner in Ubora competition.

Developed desktop imaging software to classify CT/X-RAY IMAGES.

Developed a mobile application for keeping health data records. And Integration of several micro-services in it.

SOFTWARE DEVELOPER

ALIANCE FRANCHISE MOMBASA |Nov 2020-March 2021

- Developed an EMR (Electrical medical record) mobile application.
- Implemented fully Nodejs back-end server to route services.
- Implemented patient data safety by use of patient power to authorized the doctor to access previous medical information.
- Encrypted patient data for data safety.
- The application is still in developed where we are implementing an analytic system.

Software/ Hardware Developer

Technical University Of Mombasa| March 2020 – June 2020

- Designed Flence Ventilator when Covid19 hit.
- Programmed the micro-controller and uploaded the Firmware to run the ventilator machine. With following parameters:

1. Implemented tidal volume 200-700mL.
2. Controlled breath rate to 40 breaths per minute.
3. Implemented PEEP pressure to 5-20cm H_2O.
4. Maintained inspiration expiration rate I: E 1:1-1:4.
5. Created two modes of operation which are Adults and Neonatal.
6. Included FiO_2 sensor to measure Oxygen 30%-100%.
7. The ventilator can be accessed in technical university of Mombasa Medical Engineering department.

- Developed a machine learning Software that could classify Covid19 images from Computed Tomography (CT) and distinguish them from pneumonia and normal images. The algorithm had 94% accuracy

8. Developed heat-maps to show the doctor why the software classified the image in a particular way. And deployed the software also to the cloud using momenta NGROK SERVER

EDUCATION

Bachelor OF SCIENCE in Medical Engineering
Technical University Of Mombasa 2nd Upper Class Honors
2015 – 2020

KAAGA BOYS' HIGH-SCHOOL. GRADE(A-)
2011 – 2014
Kianthumbi pry school
2000-2010 marks 300

CERTIFICATIONS

Andela competition

IBM introduction to IOT

UBORA BEST WINNER AWARD

IBM introduction to Machine learning.

IBM introduction to Data Analytics

INTEREST

Software Design

Circuit design

IOT Development

Reading journals

Hackathons

Watching Space-X Launch

Simulation and Modelling

AFRICAN BIO-MEDICAL CONSORTIUM(ABEC)
UGANDA INSTITUTE OF RESEARCH(UIRI)| Dec 2019

- Design of endotracheal intubation Device.
- Implemented supraglottic capacity to the device for blind intubation
- Device adopted for emergency cases to give cardiopulmonary resuscitation (CPR).
- Designed the device to be flexible so as to be able to be easily inserted into the patient and face mask or anesthesia machine.

BIOMEDICAL ENGINEER INTERN

MERU LEVEL 5 TEACHING AND REFFERAL
May 2019-September 2019

- Servicing medical Equipment loading software on them according to manufactures specification.
- Change of mammography monitors work station repair and upgrade.
- Reloading and updating of the mammography software.

- Carrying out rehabilitation engineering on medical equipment. Am also proud one day I helped configure the server for the MRI machine and route all communications (Since I have a heavy background in programming NodeJS)
- Monitor performance and reliability of equipment and system configuration and recommend replacement or modification as required.
- Installed ICS (Image Construction System) and IRS (Image Reconstruction Systems Computed Tomography (CT Scan).
- Maintain logs of hardware and software problems detected.
- Used my programming skills in back-end skills to explain to bio-medical technician how to configure server and how to run terminal and diagnose software problems and killing services in Linux system and restarting a service again.

BIOMEDICAL ENGINEER INTERN

MERU LEVEL 5 TEACHING AND REFFERAL| JUN 2018 – September 2018

- went back for my second attachment here and my main work was maintaining medical Equipments and do preventative maintenance and calculate the life cycle of each device. Repair of ultrasound probes.
- Writing bash script to enhance software installation in old computer systems running Linux systems (since I have a background in Linux system).
- Installation of Gambro dialysis machine.
- Diagnosing chemistry analyzer machine changing the stepper motors and helped the biomedical technician in understanding and installing right motor for the machine since stepper motors are critical to current and voltage supply and are programmed differently.
- Advised about exposed medical equipments which are connected to network, risk of malware or cyber security threats and measures to take and isolation of patient data in case of attack.

COMMUNITY ACTIVITIES

UPENDO HELP GROUP,
Volunteer,
2017-Present

Mombasa Facebook Developers Group
Member,
2017-Present

SWAHILI POT HUB
Member,
2016-present.

Tum Robotics Club
Organizer,
2018-2020

Ai Kenya
Member,
2018-present

TECHNICAL UNIVERSITY OF MOMBASA (INTERNAL ATTATCHMENT)
ENGINEERING LABS | May 2017 -Aug 2017

- Connection of star delta
- Connection and repair of X-ray Cathode and the rotating anode
- Piping and connection of Air-conditioning machines and carrying out new installations
- Maintain logs of hardware and software problems detected.
- Supervision of computer labs for support and provision of other ICT services.
- Servicing of High voltage electrical labs and replacing broken fuses and cable cords.
- Repair of dental chair dis-assembling and assembling
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REFERENCES

STEPHEN MWANGI,
Chairman of Department Medical Engineering,
Technical University of Mombasa,
P: 0721878768.
E: mwangisteve2000@yahoo.co.uk

DAVID MUTIA MALOMBE,
Lecturer and Project Coordinator
Technical University of Mombasa,
P:0721843170.
E: dmalombe@tum.ac.ke

JOSEPH KOOME
Director.
OyanTech Company,
P: 0712398330.
E: joseph.koome@oyantech.com