

CURRICULUM VITAE

MBARI PETER MUCHIRI

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CONTACT INFORMATION

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PERSONAL INFORMATION

Date of Birth 1982
Citizenship KENYAN
Gender MALE

EDUCATION

PRIMARY 2000: MASAI PRIMARY SCHOOL
CERTIFICATION: KCPE,
SCORE: 630/700

High School 2004: KIRITI SECONDARY SCHOOL
CERTIFICATION: KCSE,
SCORE: MEAN **GRADE A**

University 2006 TO **2012 June**- UNIVERSITY OF NAIROBI
Bsc. ELECTRICAL AND ELECTRONICS ENGINEERING.
SCORE: **Upper Second Class Honours.**

Summary :

Licensed electrician Class C1 5640,
Registered Graduate Engineer B11613

Highly motivated Electrical engineer with a passion for building smart systems in the areas of energy, remote controls, robotics, automation, healthcare and data acquisition.

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Career aspiration:

Developing and supporting technology in IT and Electrical and Electronic Engineering for the good of humanity.

Career Objectives:

Effective, efficient application of knowledge, practical skills and expertise to aid in the analysis of business requirements, designing solutions, deploying, installing and configuring architecture components and troubleshooting system problems.

WORK EXPERIENCE:

Jan 2018 to Present

Automation Engineer: Blink Electrics Ltd

Blink electrics ltd is an electrical and electronics engineering company specialising in research and design of custom solutions for problems whose solutions are not readily available off the shelf or where the available solution is too expensive. We major in renewable energy, industrial IOT and automation, installation and maintenance of plant equipment.

Currently Developing IOT devices based on GSM/GPRS connectivity for home automation. These projects have given me a full understanding of the IOT infrastructure, development and integration of devices into the system. I am currently building a device and system for monitoring LPG consumption in the smart home. To view the dashboard [follow this link](#).

Key Projects

- Upgrade for water pumping facilities at Eldoret International airport in partnership with contralinks solutions and services ltd. Projects Involved synchronisation of water treatment via GSM based IOT technology which I designed and implemented
- Installation of 2No 500kVA genset at Kisumu International airport complete with Switch gear and GSM based telemetry system for remote monitoring
- Ongoing: Design of a Generic telemetry Device for General applications in Industrial monitoring of equipment and plants
- Design and implementation of Controls for a yoghurt filling machine for Ramsis Enterprises ltd
- Design and implementation of controls for veneer peeling machine for Biashara masters Sawmills
- Maintenance and troubleshooting of Remote Controlled Cranes at CP Power EA ltd
- Research and Development of Systems for making of Colloidal Silver for Meditech Ltd
- General Maintenance of facilities at Gearbox ltd, Lighting, Load balancing and Monitoring etc

Jan 2017 to December 2017

Position: Engineering Manager

Power Transmission and Control Services Ltd (PTC)

Power transmission and control services is a company that specialises in the maintenance, installation and design of industrial automation systems, electrical systems. The biggest client is Kenya Breweries Ltd where we are in charge of installations, repair and maintenance of all their industrial electrical installations. This includes power installation, facilities as well as highly specialised instrumentation.

My roles includes:

- Ensuring that that PTC workforce of close to a hundred Engineers, technicians and electricians are utilised effectively to ensure maximum overall equipment efficiency in the production of beer and spirits in UDV, Tusker Brewery and East African Maltings.
- Production of Bill of quantities for various projects in conjunction with the client engineers.
- Installation commissioning and life cycle support of various plant equipment in conjunction with client engineers ensuring all standards are met, timely execution with great emphasis on understanding how the equipment works. This includes; Generators, brewing equipment, packaging lines, water treatment equipment, SCADA and various other system at Kenya Breweries, Tusker brewery
- Finally I was in charge of handling any disputes and conflicts arising from the customer-contractor interaction and ensuring quality assurance on the all the electrical and automation jobs assigned to us.

2015 March to Dec 2016

Embedded systems Engineer/UAV Propulsion systems Engineer Sandpiper Technologies Ltd

Sandpiper technologies is a company that specialises in automation and systems integration. As an embedded systems Engineer, my role has been to develop firmware that enables various components to be interfaced with each other in the process of making a whole system that achieves the requirements set out by the clients.

In the course of discharging my duties I was promoted to head a newly established propulsion department which primarily deals with engines and associated control systems.

2014 Jan to December 2014 UseFul Platform Project Manager

Useful platform is a fablab setup by Institute of Economic Affairs as a way of providing enabling

technology to communities in disadvantaged peri-urban Nairobi. The platform is based on the fablab design and majorly focuses on digital fabrication.

Duties and Responsibilities

- Managing day to day activities of the lab
- Procuring materials and machines for the lab
- Assisting with courses development for teaching technical subjects to non techies
- Supervising lab assistants
- Preparing reports about the performance of the lab and evaluating means of improving it.
- Researching on ways of making the lab self sustaining and implementing them

2012 June to Nov 2013:

ACCESS ENERGY ltd.

Position held: Electronics design manager and field manager.

Roles

- Developing embedded data acquisition systems for wind turbines and solar array monitoring .
- Developing embedded systems for managing smart microgrids.
- Installation and monitoring of the performance of the data acquisition system in the field.
- Analysis of the data collected by the data acquisition system .
- Maintenance scheduling for wind turbines, Solar arrays and associated equipment.
- Liaising with subcontractors for the manufacture of the data acquisition system.
- Design and installation of wind turbines and solar pv systems
- Design and implementation of building services in houses for lighting and domestic use

2011 to 2012 June:

UNIVERSITY OF NAIROBI SCIENCE AND TECHNOLOGY PARK:([FABLAB](#))

Skills gained:

- digital fabrication by the use of computer numerical controlled machines (CNC) to rapidly build electronic prototypes.
- embedded programming in C for the AVR family of microcontrollers
- Circuit fabrication and design using CAD.

2010: July -October

Company: Cadbury Kenya

Position: Attachee

Role: Assisting the engineers in the repair and maintenance of the machinery to ensure continued performance.

ACHIEVEMENTS AND RESPONSIBILITIES;

2017: Registered Graduate engineer with ERB - Reg No B11613

2017: CLASS C1 licensed electrician

2002-2004:

- Chairman Kiriti secondary school Science club.
- Dining hall captain
- Chairman Kiriti secondary school Bursary club.
- Recognized as the **most outstanding student** at Kiriti Secondary school by Tetu Action Group
- Won the students Science Congress National award in Physics exhibits for design of a digital burglar alarm system.

2008

Institution: University of Nairobi

Organisation: Engineering Students Association

Position: Secretary General

Role: Helping student engineers link with industry through organisation of forums where the industry players can interact and share knowledge with the students.

2012

Institution: University of Nairobi Science and Technology Park

Position: Student

Project: Electronic Biopsy Device

Event: Biomedical Engineering Summer School(August 2012 in Kampala Uganda)

Award: Most innovative project

Host: Economic Commission for Africa

This project involved the design of a robust and efficient hand held tool that reduces the cost incurred in the process of mass screenings and improves the sensitivity for early breast cancer detection. The device utilizes the electro_mechanical properties of tissue sample (impedance and pressure) to help in early detection of cancer for the breast using an array of electrodes, a micro controller and a computer.

2012

Institution: University of Nairobi Science and Technology Park

Position: Student

Project: Affordable infant incubator

Event: Biomedical Engineering Summer School(August 2012 in Kampala Uganda)

Award: Project with high economic potential

Host: Economic Commission for Africa

This device was designed to reduce high mortality rate of infants who die due to lack of proper facilities in our hospitals. The lack of these facilities is partly due to the high upfront cost of acquiring such equipment.

This project won an award for having "high economic potential" at the First Biomedical Engineering Innovators Summer School which took place in Kampala Uganda.

2012

Institution: University Of Nairobi Science and Technology Park

Position: Student

Project: GSM/GPRS controlled Electronic Signage system

This system displays the a message that is sent via SMS on an led matrix. This project was designed using AT89S52 but was later ported to use ATMEGA mcu.

2012

Institution: University Of Nairobi Science and Technology Park

Position: Student

Project: Domestic utility critical level monitoring system.

This was my final year engineering project. This project involved design of an embedded system to that power and water supply are monitored to provide warning signals for low level of either the water tank and the credit on the prepaid electricity meter.

2012

Project:[bitHarvester](#),

Award: Peoples Choice award

Host: National aeronautics and space administration (NASA)

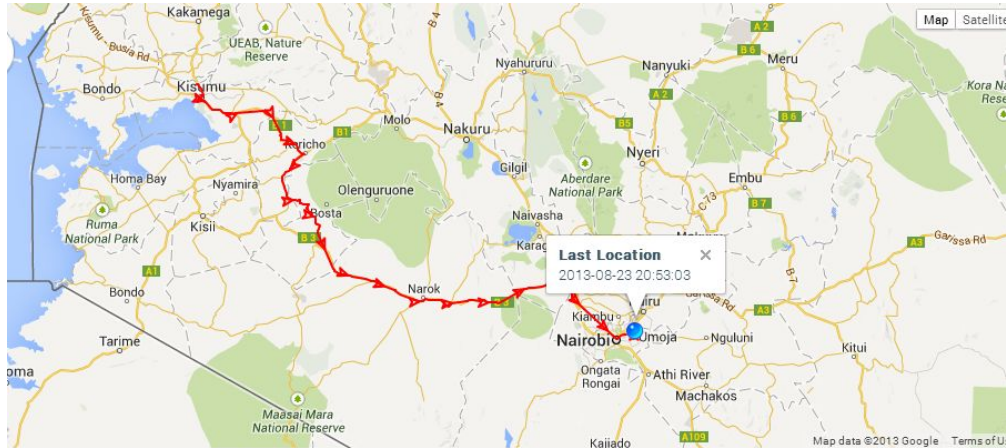
The bitHarvester is a GSM -enabled data acquisition and control system, for a wind turbine and solar arrays. It was designed as an entrant in the [NASA SPACE APPs CHALLENGE](#) 2012. The project scooped the [people's choice award](#) globally.

2013

Project:Car Tracker

Award: None

Designed an asset tracking device using gps and GPRS modem to track and remotely control several I/O lines. The system reports location via sms queries as well as through a real time web interface.



2014

Project : Mkulima Hodari

Position: Technical Director at Blink electrics

Client: Synnefa Green ltd

Mkulima hodari is a farm automation system that I am building to automate a greenhouse. This is achieved through data logging from various sensors and actuating valves to water the plants on schedule or using SMS commands. Each user have an account on the web where they can control the device, schedule events as well as view data history and graphs of the visualised data. Development of this project is ongoing.

Project: Data Logging For Cold room

Position: Technical Director at Blink electrics

Client: USAID

This project involved designing a temperature data logger for monitoring the performance of cold room used for preserving farm produce. The device stored the data on an SD card and also sent alerts via sms to the person incharge. The data is later plotted to visualise the performance of the system.

Project: Solar charge controller

Position: Position: Technical Director at Blink electrics

Client: One Degree Solar

This project involved the design of a charge controller for brightbox, a home lighting kit. The work involved improving the current charge controller to include maximum power point tracking for better efficiency in charging as well as intelligent low voltage cut-off to protect the battery system

Project: Payment Device

Position: Position: Technical Director at Blink electrics

Client: Tracopay

This project involved the development of a proof of concept device for Tracopay. For more

information read online at the tracopay site

MENTORSHIP AND VOLUNTARY WORK:

Organisation: lakehub

Position: Secretary

Start: January 2013

Lakehub is an initiative that is bringing together technology developers from western Kenya. My role apart from being secretary of the board is to inspire others to pursue hardware hacking and raise awareness about the impact of embedded systems in day to day life. I have been volunteering my time to show beginners the basics of using arduino and the Raspberry Pi.

Institution: University of Nairobi Science and Technology Park (The fablab)

Position: Mentor

Initiative : Fablab microcontroller class.

Year: 2012 to present

Role: Founded the Fablab microcontroller class where we train students and encouraged them to appreciate embedded systems design and programming. Using the resources provided by the science park we are able to introduce many students to embedded systems design. The initiative has been a great resource to many upcoming engineers and other developers as a platform for collaboration, learning and sharing.

Organisation: [*ihub](#)

Position: Mentor

Year: 2012

Role: Mentoring techies about embedded systems and robotics [*iHub robotics initiative](#). This is aimed at improving the awareness about technology within the tech community and promote innovation. From this forum, many beginners have launched their dreams of becoming future innovators and engineers.

PROFESSIONAL QUALIFICATIONS

Proficient with

- Project Management.
- General electrical installation and maintenance.
- Embedded programming in C and C++
- Electronics design
- Schematics capture
- Printed circuit board design and prototyping
- Electronics simulation
- Testing of electronics and troubleshooting.
- Maintenance of electronic equipment
- Maintenance Scheduling

INTERESTS

I have keen interest in

- Renewable energy
- Power production, distribution, consumption and monitoring for quality and interruptions
- Smart Grid technology
- Smart building technologies and home automation
- Embedded programming and design
- Embedded data acquisition and controls systems.
- Telecommunication
- Internet of things
- Instrumentation
- Robotics
- Power plants

Referees

1. **Eng Meshak Mbae**
Phone: 0721659899
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Affiliation: Kenya Airports Authority
Position: Electrical Engineer
2. **Peter Ipapo**
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3. **Titus Gichia**
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Affiliation: Contralinks Solutions and Services
Position: Managing Director

