

BOB AFWATA

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PROFESSIONAL SUMMARY

- Electronics Engineer with over 8 years of experience in system development, Software Design and development, Research and development.
- 4 years of active research and development in cutting areas such as Product design(3D printing, pcb design, molding and casting) ,VR,FPGA,DSP,Imaging and Camera systems ,Sensor fusion(Wireless sensor Networks) and role of quality education and technology at changing workplaces
- Key partner to major Universities in Kenya like JKUAT in helping bridge academia and industry through workshops, technical training and collaborative projects.
- Co-Published 2 papers to Stanford Fablearn and UN Commision on Women and Youth peer-reviewed journals.

TECHNICAL | LABORATORY SKILLS

PCB Design: Altium, Kicad , Allegro, Easyeda.

Embedded Linux: ,Computer Vision(OpenCV),Yocto,embedded Android,buildroot,u-boot ,Linux kernel and device driver development,gstreamer

Programming : C/ C++ ,C#, Qt5,ARM and x86 Assembly,Matlab and Simulink,python and shell scripts

CAD and Product Design : Solid Works, Fusion 360 , 3D printing, CNC milling,Sheet Metal,Laser cutting

Firmware Development : STM32, Esp32,MSP430, AVR(arduino), iMx 6 and 7, Raspberry pi,Beaglebone black.

Os and RTOS : Yocto ,Embedded Android ,Zephyr, FreeRTOS,LVGL (Graphics)

Electronics Fabrication Skills : Soldering, Electronics pick and place,pcb etching,Testing and Debug,Logic Analyzer, Oscilloscope,

Advanced Research and Technology : FPGA,DSP,verilog,Imaging(Cameras systems) ,ADAs and AGV

EDUCATION

Emertxe Technologies India

Aug.2020-June 2021

Advanced Diploma in Embedded systems : C/C++, Data structures using C++,Bash scripting,Microcontroller programming (PIC16) ,Linux kernel and device driver programming, TCP IP stack ,networking fundamentals in C . Built over 10 projects including minishell in Linux,image steganography in C, TCP IP stack, Digital Car Blackbox using PIC 16 Microcontroller , Linux based Os and drivers using vanilla linux ,buildroot and uboot.

Fedével Academy -Online

Jan 2021 - April 2021

Advanced PCB Design Course using Altium : Schematic and PCB symbol creation, Schematic capture of RK3399 SoC, Layout,routing ,High speed design,PCIE,USB,HDMI,eMMC,BGA fan out,length matching and tuning.

Kenyatta University, Nairobi, Kenya

Sept.2011-Dec.2017

Bachelor of Science Electrical Engineering, graduation with Honors

PROFESSIONAL EXPERIENCE

State Department for Defense ,KDF

Jan.2018-Present

Consultant RnD Engineer; Firmware,DSP,Electronics

- Reporting directly to Senior officers and a team of 40 specialist cadets,Captains ; formalized system requirements ,Design,implementation for 2 key projects in line with their mission and vision.

- Research and Development of Signal processing systems using Matlab and Simulink. Used tools such as alsa, portaudio and FIR filter design tools (Matlab) for prototyping and audio processing.
- Designed and developed firmware for communication equipment using Raspberry pi ,AVR in C and software using portaudio in linux.
- Modeled and tested antenna systems for their communication equipment
- Design and fabrication of Battery Monitoring system for communication and UGS systems.

Intel Corporation ,EMEA

Jan .2018 - Present

Software Innovator

- Research, Develop and sell software using latest Core Intel technologies ,support and help clients migrate to these Intel technologies and showcase at tech conferences.
- Developed reference firmware using Intel firmware support package,Coreboot , uefi,zephyr on Intel platforms ; Galileo,Edison and up squared board. Firmware developed as proof of concept and for developing capacity of secure communication ,hardening IoT equipment against attacks for local IT companies and customers.
- Attended and Presented at Global IoT Conferences on behalf of Intel .Built and Presented on a Multiprotocol Secure IoT Gateways.
- Successfully ran over 20 technical workshops in over 7 universities showcasing core Intel technologies ;OneAPI,OpenVino,Realsense,Intel Galileo and Edison

Lakehub Foundation, Kisumu

Jan .2018-Present

Technical Consultant and lead Trainer

- Trained 25 lecturers from 6 universities and technical colleges on 3D printing, CAD software and medical device design as part of UDIP ,academia industry relations supported and financed by French Embassy Nairobi.
- Trained 400 youths all over Kenya on CAD, 3D printing, design for manufacture,Design thinking, medical equipment design a program sponsored by US Embassy Nairobi.

Focus Lense Electronics Limited Kenya.

Mar.2017- present.

Director of Engineering , RnD Engineer and technical consultant.

- Leading a team of 4, conceptualized,designed and developed 2 cloud enabled desktop applications for Philips Medical East Africa for their Back to Rhythm campaign. Technologies used included sensors ,Azure IoT and .Net Framework.
- Designed and built an insect monitoring system for ICIPE Research facility using python, raspberry pi and Tensor flow
- Developed an integrated asset tracking and fuel monitoring solution for a client called CoreNetworks.Project involved pcb design using Altium, developing firmware for STM32, CANbus,RS232,USB and OTA . Os for raspberry pi developed using Yocto framework

Synergetics Systems

Jan .2018 -June.2022

Systems Integration Engineer

- Designed and developed video surveillance systems based on an imx6 board, firmware developed using yocto framework ,gstreamer,opencv and alsa tools . Desktop application built with Qt5 and C++ .LTE modem integration with qmmi driver in linux.
- Research and development of Imaging systems for security .Designed PCBs, firmware ,Dashboards and analytics platforms
- Designed ,fabricated and deployed over 110 asset tracking devices .
- Supported 7 clients over time in deployment of IoT tracking systems, Camera systems

LEADERSHIP EXPERIENCE

Inspire Youth in STEM ,JKUAT

June.2022- Present.

Part time Lecturer and Mentor

- As key partner with JKUAT ,I taught a freshman class of 114 students on introduction to programming with Python, Arduino,IoT,Robotics and web development fundamentals
- Graduated a class of 114 after an 8 week thorough training ,career guidance and mentorship.
- In charge of 4 mentors and trainers ,carried out a trainers session, planning and coordinating their training.

Gearbox Hardware Meetup

Sept.2016-Apr.2019

Technical Trainer ,Organizer

- Organized and trained graduate engineers, students on electronics ,pcb design, IoT during monthly hardware meetups
- Technical Judge : Vilgro Medical equipment design Hackathon

SELECT PUBLICATIONS

- **Wanyiri, J., Njerenga, S.,Afwata, B** (2016). Foondi Workshops Reflections on Product Design & Electronics Workshops Run in Kenya (Stanford Fablearn EDUCATOR PANEL)
- **Joan ,D. Kisato,J, Afwata ,B.** (2018). UN Commision for Women and Youth Conference: Role of women and Youth in Changing workplaces.

AWARDS

- Intel Innovator of the Year
- University Representative to the UN Conference , Kenyatta University awarded for conference representation.

2018- 2019

Spring 2016

PROFESSIONAL MEMBERSHIP

- IEEE CAS Kenyan Chapter
- Institute of Electrical and Electronic Engineers
- Intel Innovators Program

2021-Present

2019-Present

2018-Present

Referees

Benard Adongo - Senior Software Engineer **BRCK**

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James Odede - CEO and Founder **Lakehub Foundation Kisumu**

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Dr Jackie Kisato - Senior lecturer and Researcher - **Kenyatta University** ,department of Fashion and Arts

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