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Electrical and Electronics engineer - IoT developer  
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**Date 8th Jan 2021**

Dear Sir / Madam,

I am Bob Afwata ,an electrical and electronics engineer from Nairobi Kenya ,Founder of Focus Lense Electronics Limited ; a design and consultancy firm based in Nairobi specialized in IoT, Electronics and product design.

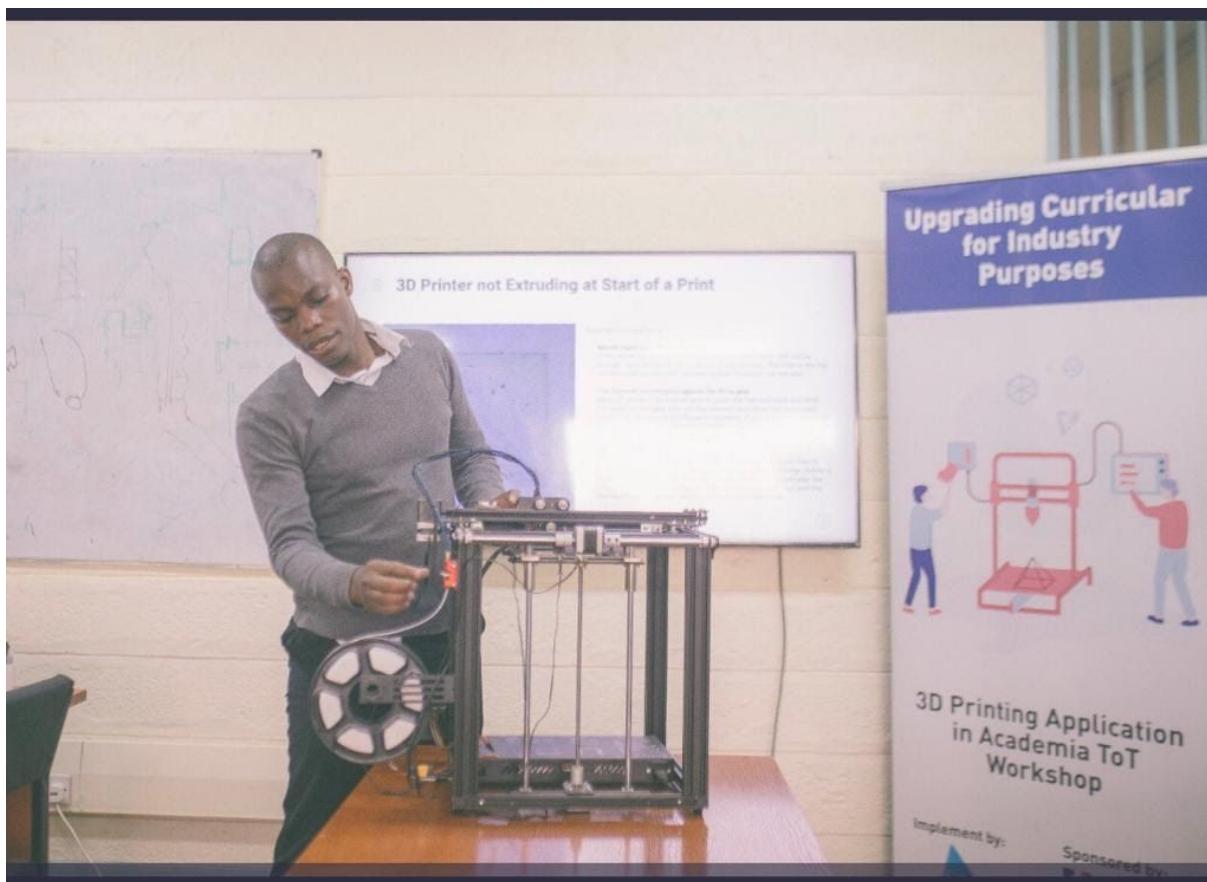
I am passionate about bridging the gap between academia and industry and for over 8 years which I have written 2 papers and presented in US ,Newyork and at the UN. I have run workshops in over 7 Universities in Kenya as a brand ambassador and software Innovator with Intel and National Instruments .

I have over 5 years experience in rapid prototyping, pcb layout tools ie Kicad and Eagle as well as CAD software ; Solidworks, Autodesk Inventor and Fusion and 3D printing.

Below are some project portfolios including software (Embedded systems), pcb design and programming, Design thinking workshops we have participated in and also ran in collaboration with Edinburgh University graduate students.

#### **LakeHub -TUK 3D printing Training**

As part of my continued effort to bridge academia with industry, I was contracted by Lakehub in collaboration with the French Embassy to run a 3 weeks training .I successfully trained over 25 technologists ,lecturers and a professor on FDM 3D printers from 8 top National Universities and polytechnics.



**FrenchEmbassyKenya** @FranceinKe... · 3h ✓  
Université Paris-Saclay, a close partner of Kenya's Technical Universities, was crowned world leading institution by reaching the 14th position of the Shanghai Overall World Univers...

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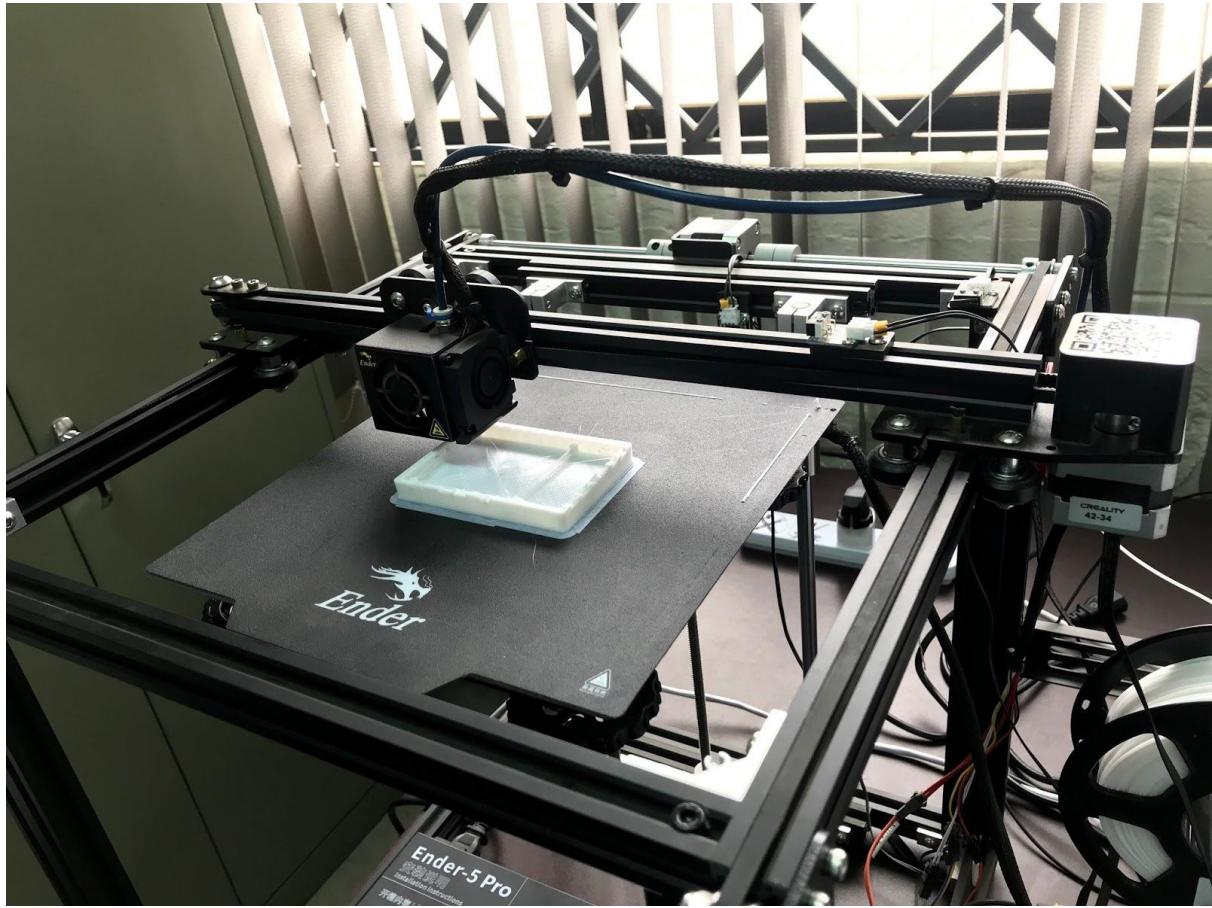
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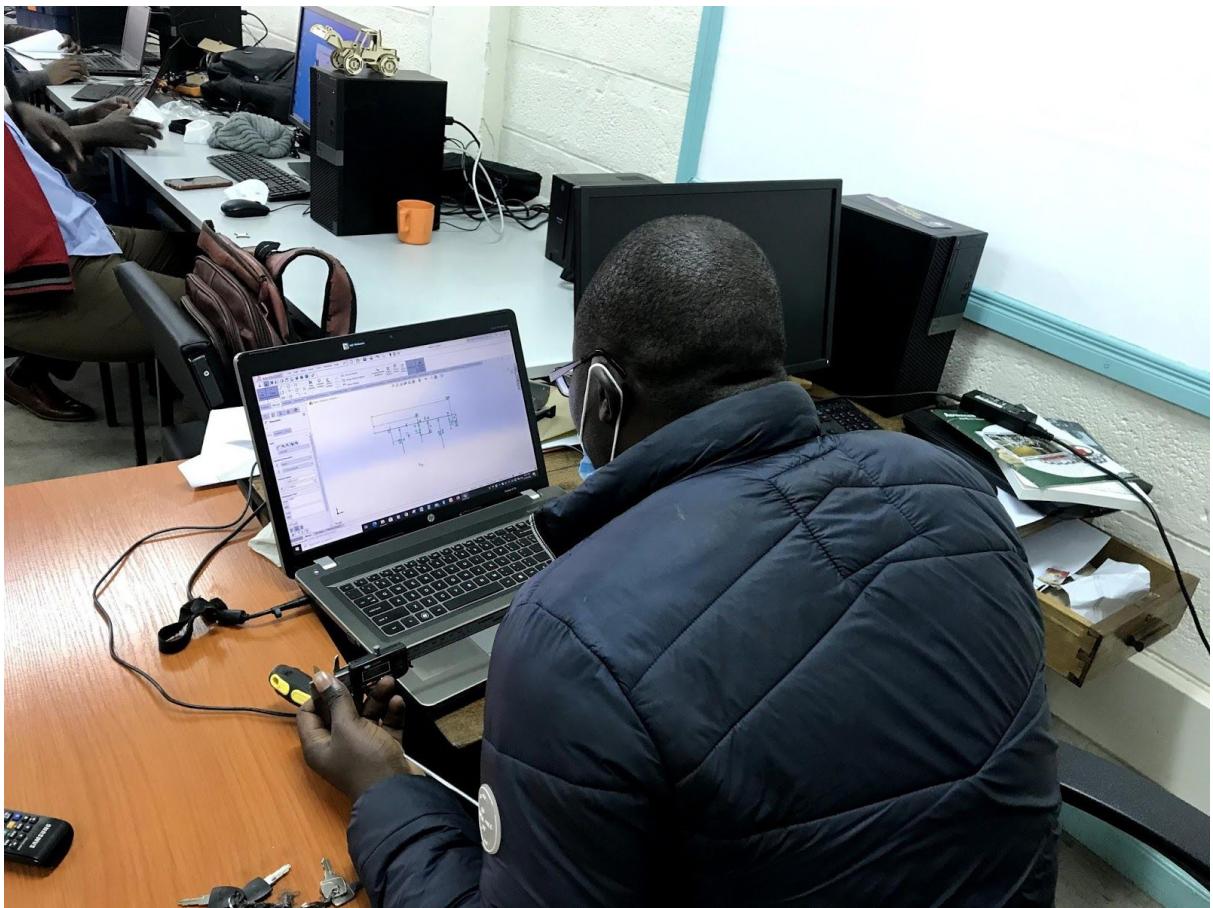
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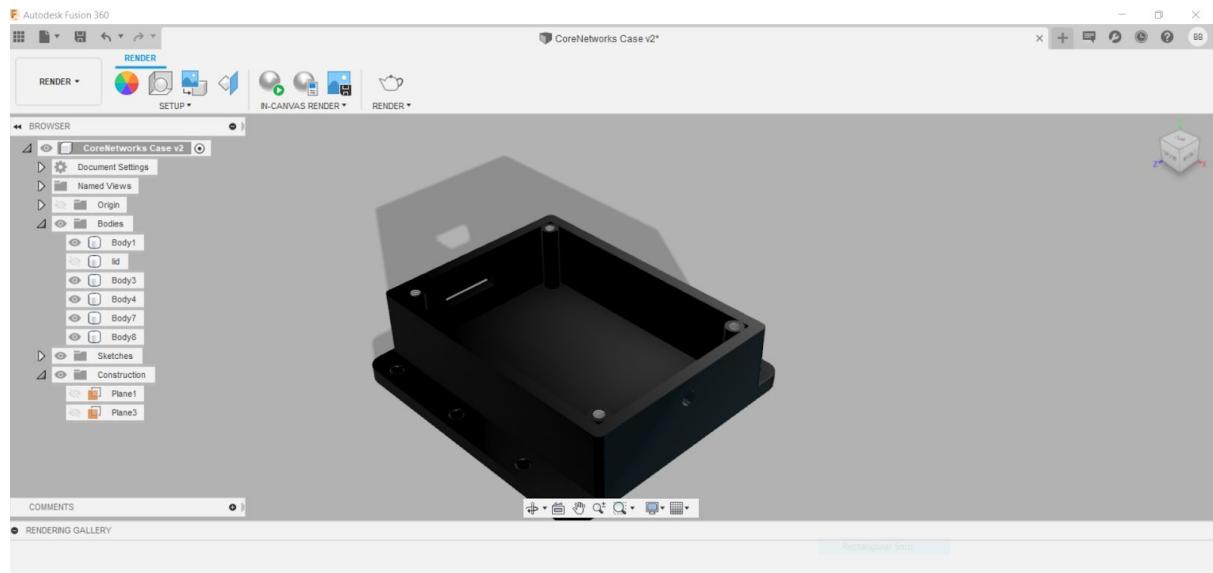


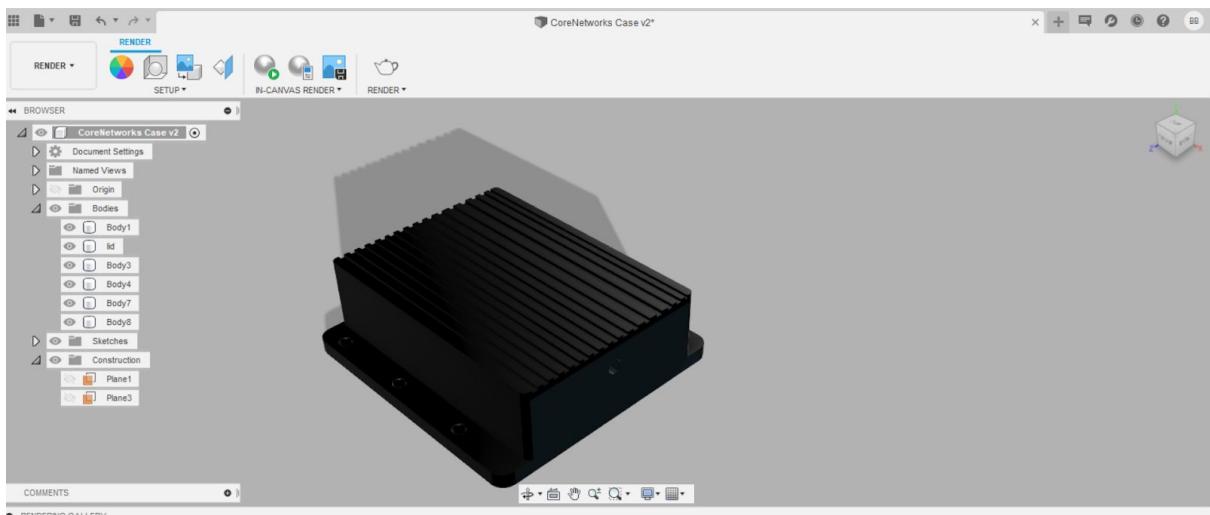
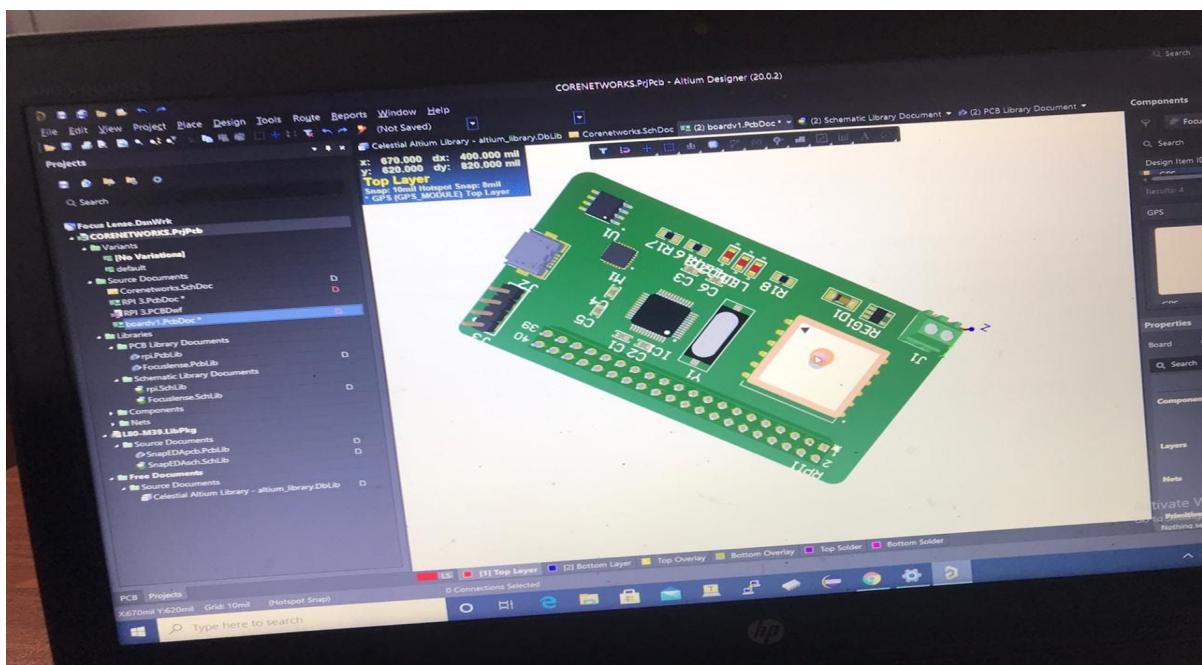


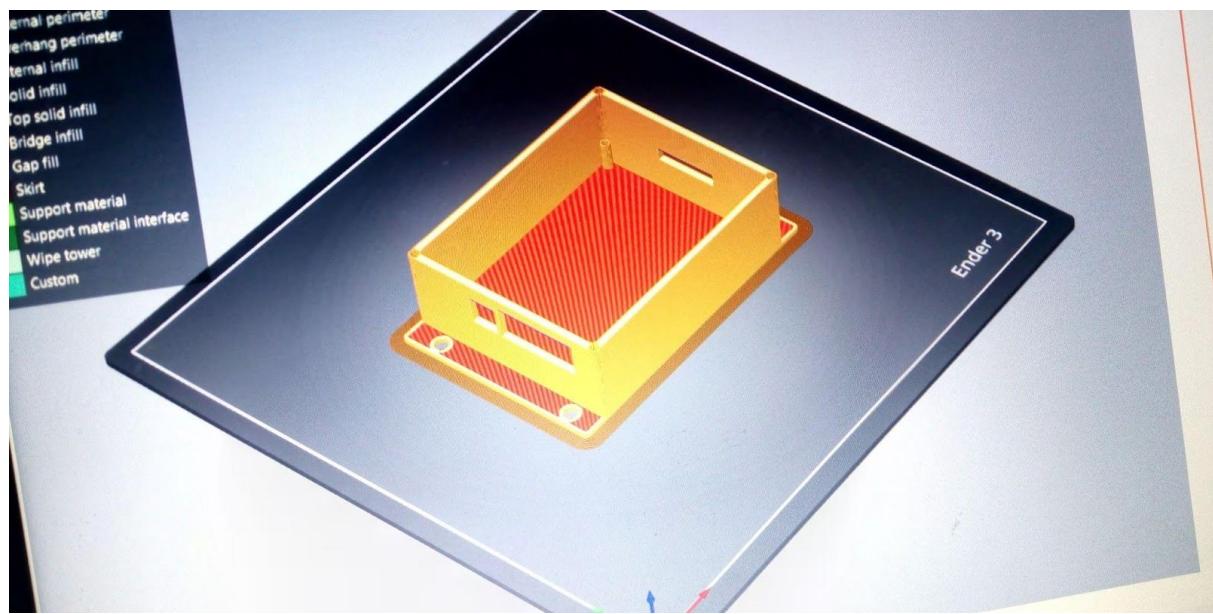


## **CoreNetworks**

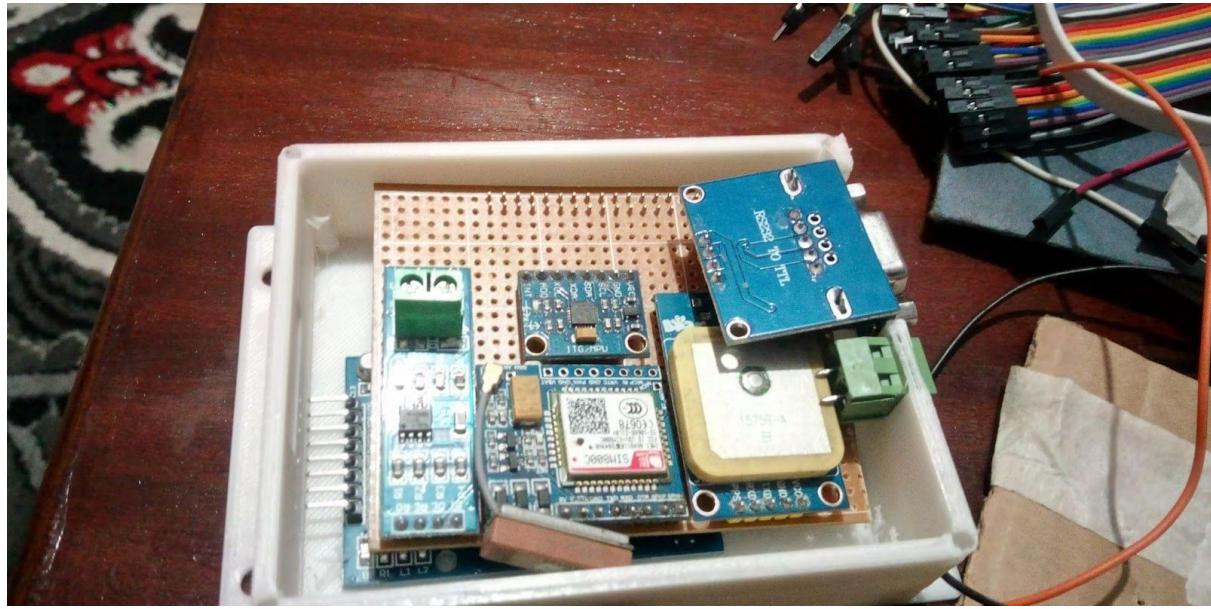
Design and fabrication of Industrial IoT gateway / Automotive Tracker ,built custom Os and firmware using Buildroot ,python application ,mqtt,sensors,flask application,BLE,rs232,rs485, accelerometer and gyroscope, RFID, Solid works case design and fabrication. 3D printing of case, soldering and firmware development, Cloud Integration using mqtt .PCB development with kicad in progress.





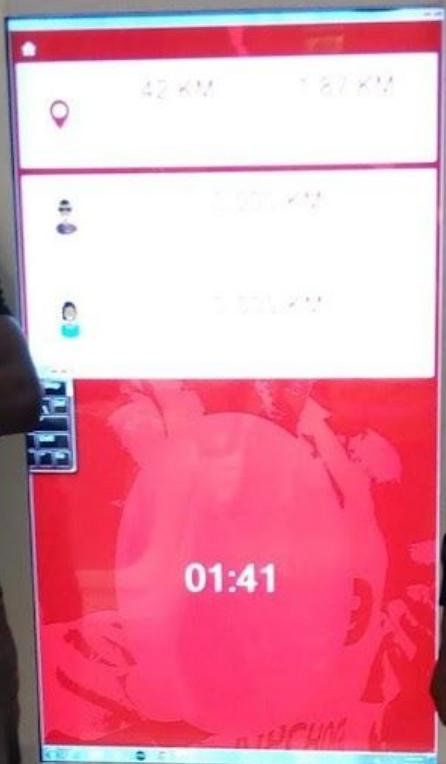






**Mc Runner and Mc Rider Phillips Healthcare and Isuzu**

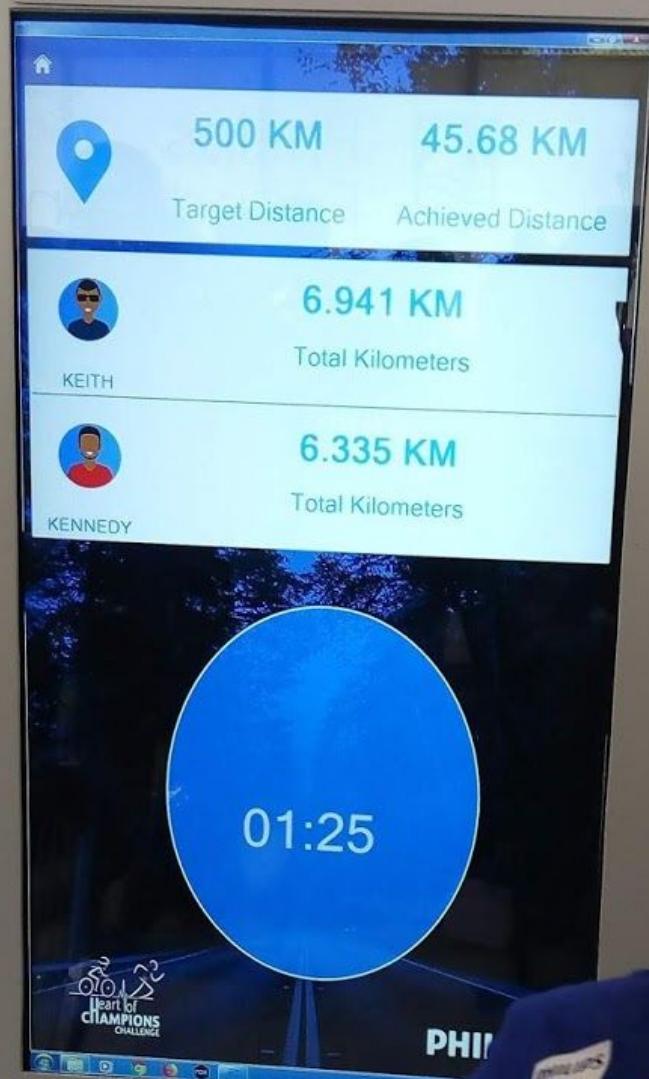
# ISUZU







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### **UN Habitat VR workshop**

Organized and ran a design thinking workshop at UN habitat head offices at Gigiri in collaboration with Ms Lei Guo and Mr Max Musau.

The workshop was on how to use Virtual reality to help solve problems in informal settlements in Mathare Slums.



### **Microsoft Global VR MR Bootcamp**

Focus Lense is an organizer of the Global MR bootcamp for Nairobi Kenya, a one day Mixed and Virtual reality bootcamp happening in over 200 cities around the globe.

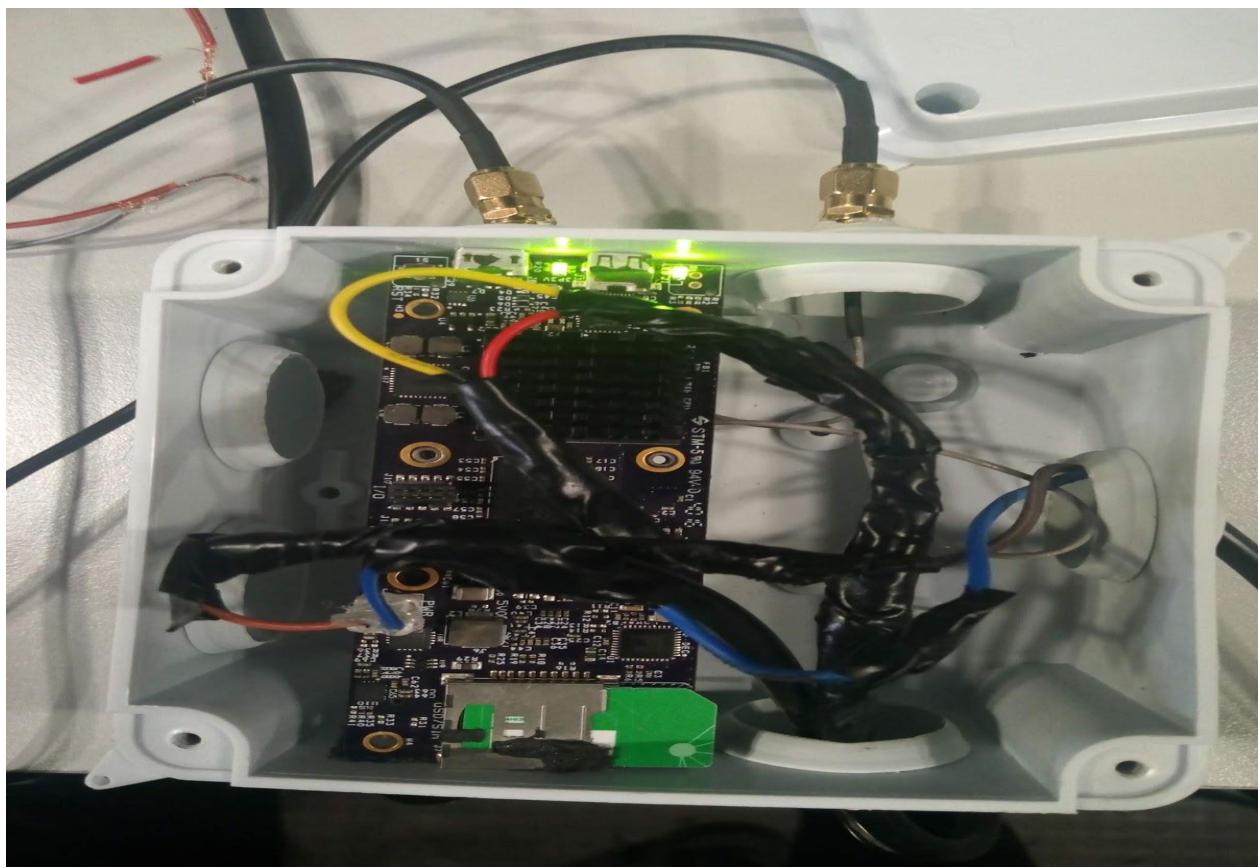
Last year's bootcamp was funded by Microsoft and Ludiqworks and Liquid Telecom at Nairobi Garage.



@abriankim

#GlobalMRBootcamp2019

### IoT video streaming and sensors device









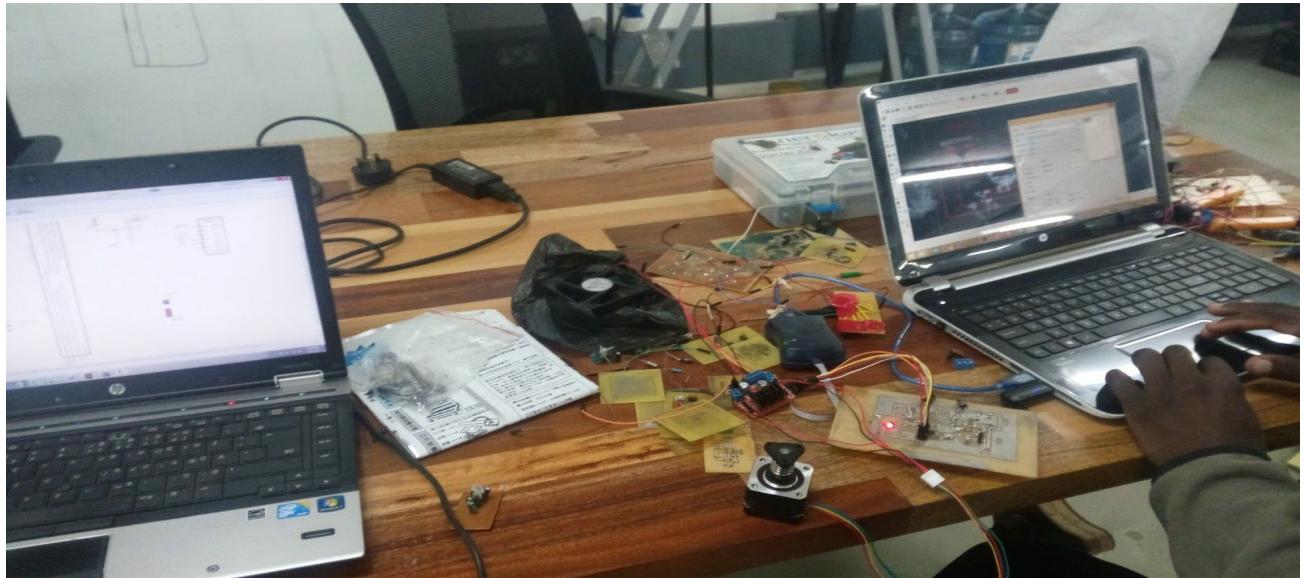
### **Insect Monitoring System - ICIPE Duduville Campus Kasarani**

Currently in the process of developing an IoT device to help monitor the insects for ICIPE in their Kasarani Research labs with cloud connectivity and audio processing with Machine Learning .

#### **3D scanner**

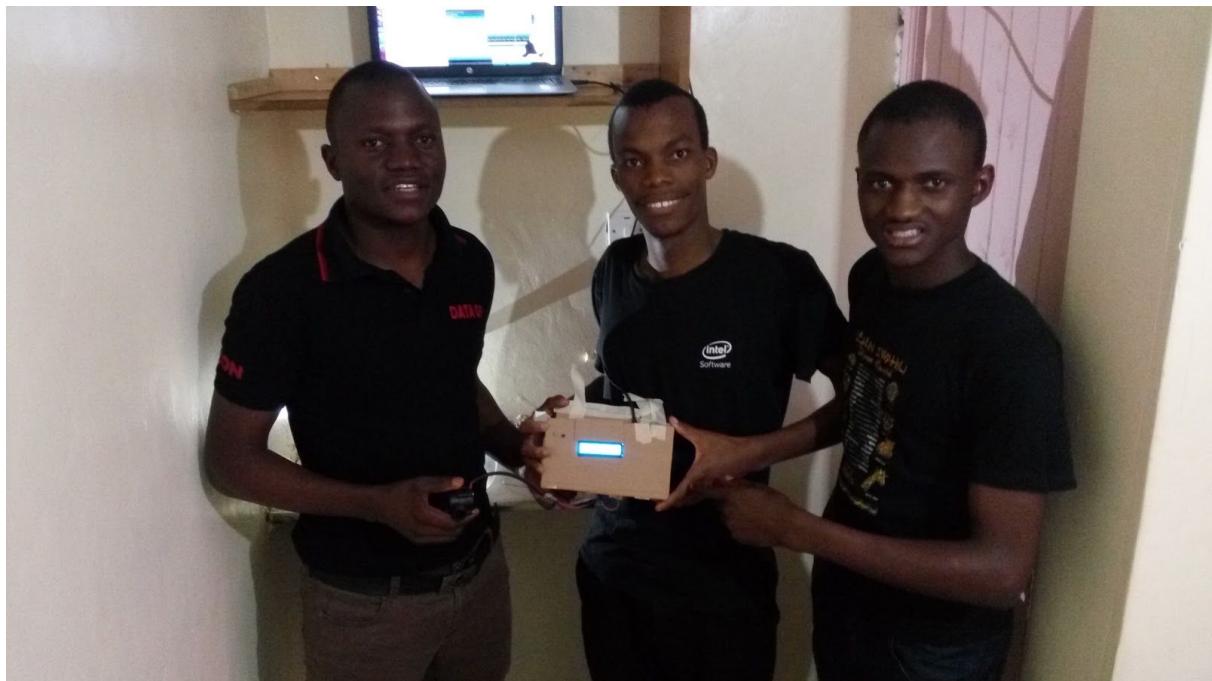
Built and programmed the electronics in this 3D scanner .

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#### **Project 2 Smart Connected Water meter**

Designed and built a smart connected water meter for a startup idea during the Seedstars France Global Hackathon -device monitored water flow rate and reported via gsm to a cloud service



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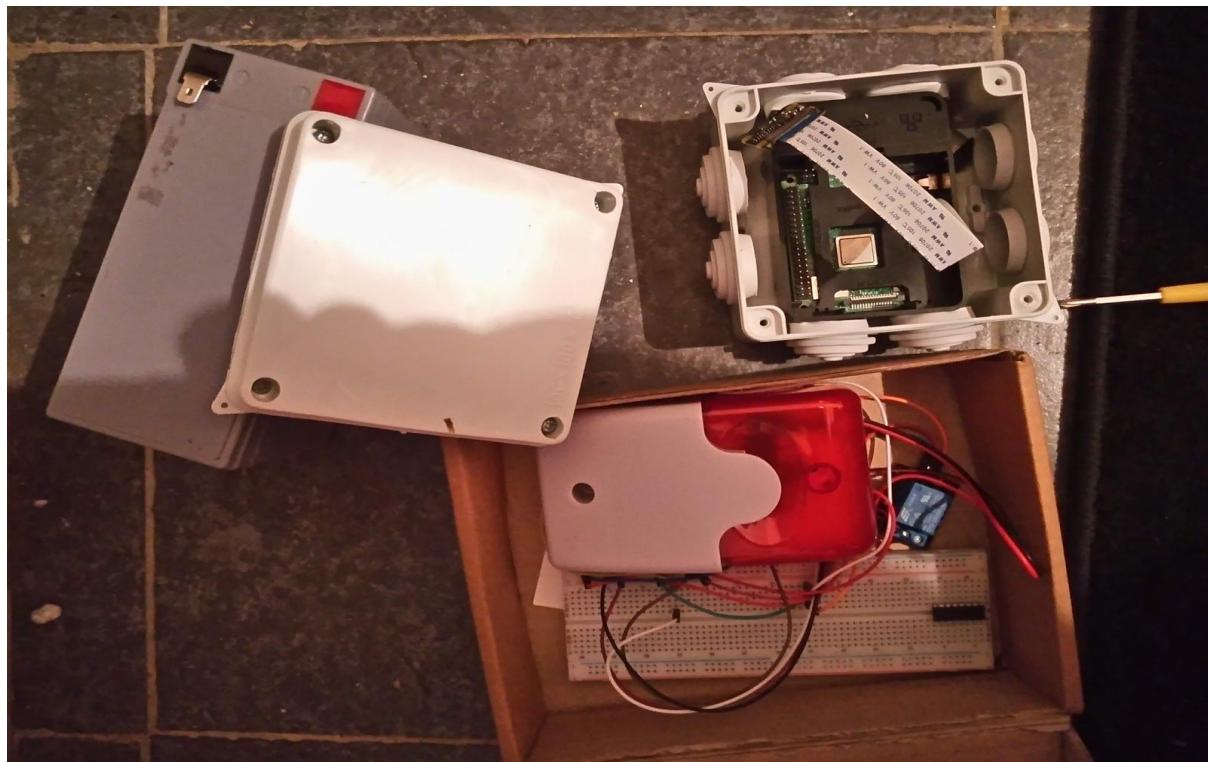
### Project 3 IoT dashboard for air Pollution and quality - USIU innovation labs

Built a dashboard for sensors using django and bootstrap .The dashboard displayed the sensor value / data from esp32866 and arduino and air quality sensors



#### Project 4 : Vandalism monitoring systems -Makueni county

Designed the software for monitoring solar vandalism of Makueni County using raspberry pi ,magnetic / proximity sensors and a webcam .Programme using an LTE modem and sent data to an online API and sent notifications

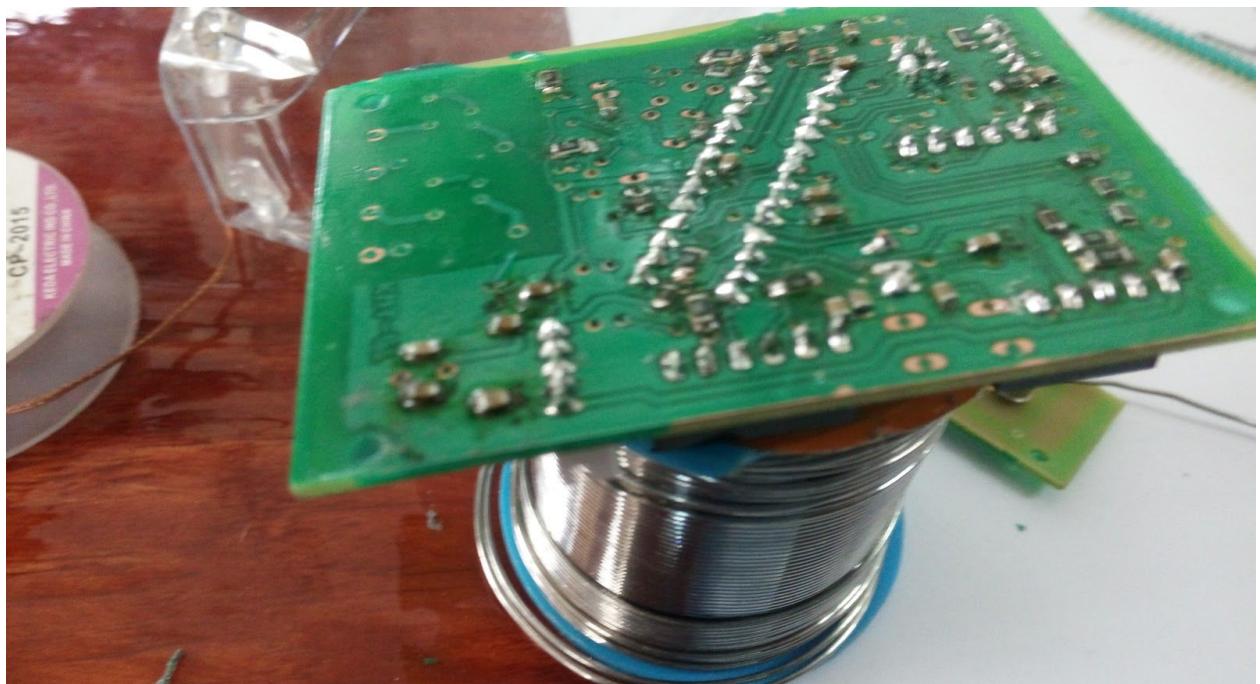


#### Project 4 UV Exposure box

Gearbox Kenya : Designed and built a UV exposure box ,from the casing .the electronics ,sourcing the UV lamb ,suction pump and rubber tube duct ,MDF wood and building a control circuit



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UV exposure box



Circuit board for monitoring chemical sensors on the etching station at Gearbox -Got involved in the Design ,etching pcb production soldering and testing

### **Solar powered Modular Speaker and powerbank**

Worked with a group of Graduate students from Edinburg University to design and build a solar powered smart speaker which also acts as a power bank and light  
Designed and built the electronics inside the smart solar powered speaker

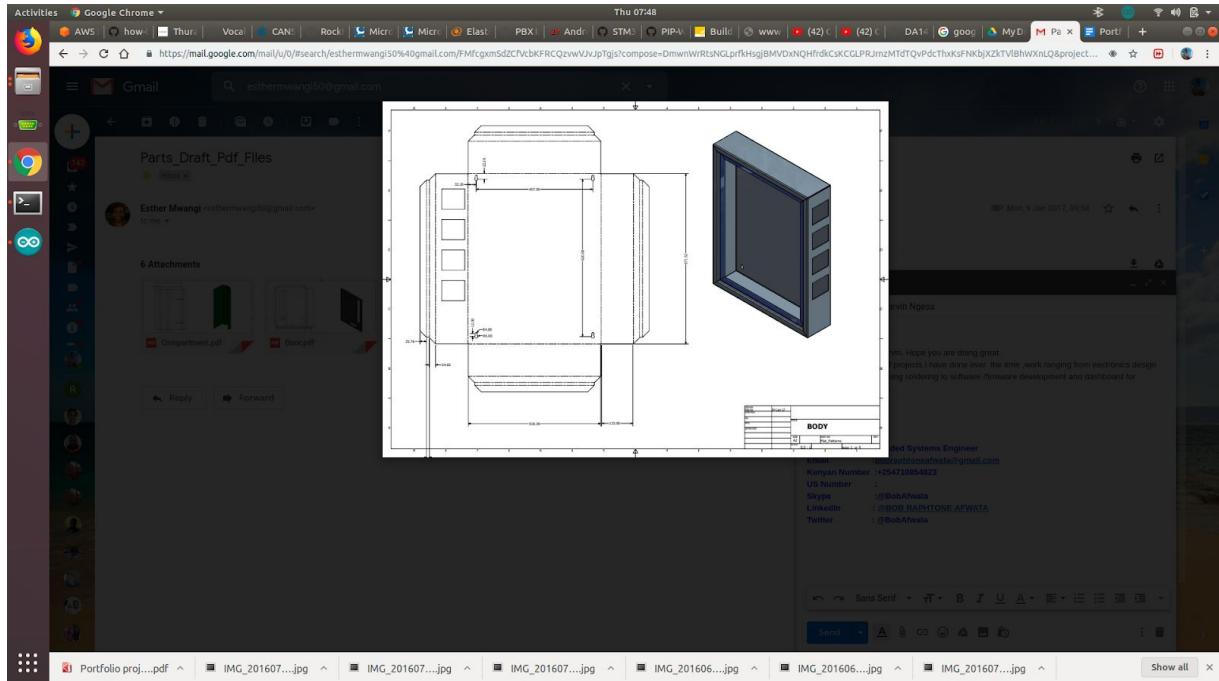


Final render /3D casing of solar powered smart speaker



## Sanitary Towels dispenser -Esvendo

Designed the casing and electronics for a sanitary towel dispenser for Esvendo a startup aimed at providing affordable sanitary towels for girls and women in unprivileged backgrounds / informal settlements - Pilot in Kibera





Looking forward to hearing from you soon

Warm regards ,

Bob Afwata  
Executive Director and CoFounder  
Focus Lense Electronics LTD.