

Career opportunity

Be the Network
and Electronics
Engineer in an
innovative
energy tech
project.

Network and Electronics Engineer



About the company: HOGL

Hydro Operations Great Lakes (HOGL) is a Rwandan company incorporated in 2016 in Kigali. The company has a recognized expertise in hydropower and is developing expertise in mini-grid management. With more than 20 employees, the company has an established core business in Operation and Maintenance (O&M) of hydropower plants and is expanding into the development of digital tools to support energy access projects in the region and beyond.

The HPPBot is a digital assistant for O&M of hydro power plants (HPPs) and is unique to the market. The project has attained competitive grant funding after being selected as one of the six start-up winners of [the AFD's Digital Energy Challenge 2021](#). To develop this project, HOGL is hiring for two new roles – a Data Science Lead and a Network and Electronics Engineer.

These two positions will be based in the same office at Kigali, will work together under the responsibility of the HPPBot project manager. The successful applicants will be trained by two international experts, the Managing Director of HOGL and an external expert in electro-mechanics. The successful applicants will also benefit from working closely with the highly experienced technicians and operators within HOGL's team.

About the first project: HPPBot

The HPPBot is a 4.0 assistant for the hydropower industry. The HPPBot organizes big data using connected sensors onsite, data introduced by operators on HMI and data provided by the User Interface for the electromechanical equipment of the plant. The data will be treated and analyzed against hydraulic theory to create predictive models of efficiency and production of the plant. The assistance and prediction given by the model helps the operators to optimize the production of the asset. The system will also have a remote dashboard interface with relevant information for the owners – financial, HR – and monthly reporting suggested enhancements the effectiveness of the plant and the potential gain of the optimizations. Once the core infrastructure is in place, HPPBot can be customized with add-ons, for example, using the hardware to provide predictive maintenance and smart management of the personnel on site. Predictions based on the water forecast applied to deep learning models are also in the project pipeline.

The tool will help to increase electricity production per plant – we are targeting an average improvement of 3%. If the HPPBot is installed in all existing hydropower plants existing in Rwanda currently, it would represent a production improvement for the country that would provide enough electricity for 55,000 homes, whilst avoiding burning almost 2 million of litres of fuel, which would have emitted about 5 000 tonnes of CO₂. The HPPBot can be deployed across Africa, and the impact can be impressive not just in increased electricity access, but also in reduced dependency of fossil fuels.

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Location: Kigali, Rwanda with travel within the country and region.

Contract: Full-time employee with 3 month probation and additional benefits.

Language: English.

Expected start date: March 2022, depending on availability.

How to apply: Submit all requested information via the online form.



About the role

The Network and Electronics Engineer (NEEng) will become an expert in PLC system design and programming. They will work on installing and perfecting the hardware and interface programming on site. The onsite system will vary depending on the client, and it is the role of the NEEng to interpret the site and find the best possible installation configuration, and ensure that the local User Interface works well for the specifications of the operator. The NEEng will be:

- Responsible for the design, installation, maintenance and improvements of hardware configuration and system connectivity;
- Responsible for design, creation, maintenance and improvements the Programmable Logic Controller (PLC) programming on site, including updates provided by the data scientist;
- Accountable for the design and improvements and responsible for the creation and maintenance of the Local User Interface (LUI) – the operator dashboard;
- Accountable to provide excellent representation of HOGI in the presence of the client.

An ideal candidate:

- Has designed, repaired and/or built:
 - A Robot;
 - An electrical installation using PLC's, and/or;
 - An IoT system including custom server configurations.
- Has excellent understanding of several communication protocols and associated hardware components;
- Is comfortable designing and implementing smart LAN design and troubleshooting processes;
- Has strong experience in encoding PLC logic and configuring associated hardware components; experience using Easy Builder Pro and/or Crouzet PLC products is an asset;
- Experience in developing components using a Raspberry Pi/Arduino is an asset;
- This position does not require a university degree as long as the candidate can provide very strong evidence of experience in electronics and PLC system design;
- This position does not require code fluency but an interest in programming is essential;
- Innovative and resilient, kind, teachable and committed; Affinity for working with people.

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What we offer as standard

- On boarding training; The successful candidate will receive an intensive training on PLC system design and configuration, user interface design and construction, and hardware use cases in Kigali from an international expert, with dedicated remote support thereafter. In this training, you will design the demo of the HPPBot together, to be installed as our proof of concept
- HOGl provides work conditions aligned with Rwandan labour code, which includes full access to RSSB health insurance, 18 days holiday, secure wage and paid sick and maternity leave as standard;
- Onsite workshops at online hydro plant(s) to introduce the first principles of optimum functional operations and maintenance;
- You will have space to bring creativity and innovation to the job specification, to really make the work your own;
- We incorporate the possibility of flexible working arrangements and a commitment to wellbeing and happiness of the team;
- We are an international team, with diverse skill sets and backgrounds. We do not discriminate on race, gender, ethnicity, disability or any other bias factor;
- We work to an exceptional standard, and will always provide support to the successful applicants in maintaining this standard;
- Once HPPBot is built, it should operate semi-autonomously. HOGl has an interesting catalogue of pending development projects, spanning energy access, finance management in remote areas, and electricity metering that the successful applicant will be expected to work on.

How to apply for the opportunity

The deadline for applications is **14:00 on the 8th of February 2022**. Any applications submitted after this time will not be considered but may be saved for other positions.

Please visit our website www.hogl.rw to access the application form, or directly [follow this link](#).