

Marecomms Inc.- Embedded Software Developer

Location: Dartmouth, Nova Scotia

Duration: 7 months

Hours/Week: Full-time expected (approximately 35)

Marecomms Inc. is set out to offer low-impact and reliable underwater communication links, with a very small noise footprint in the ocean ecosystem to minimize the sound disturbance on sea animals. Our modem will be the enabler of broadband underwater internet, which has been tested in challenging ocean environments in the past six months, and we are currently working on our first commercial prototype.

Position/Project Summary

We are looking to hire an Embedded Software Developer to build a software framework for signal acquisition and Analog-to-Digital conversion (ADC) operations for our state-of-the-art, low-power, environmentally friendly underwater acoustic communication system. You will develop a software interface in C or C++ to acquire data from an analog source (e.g., an underwater hydrophone) and provide samples to the input of our main signal processing unit. In addition to that, you will write a software module to manage the interface between the output of our main processing unit and the input of an iridium satellite relay. You will also manage the scheduling of transmit/receive of our system. You will work towards the development of the most advanced underwater acoustic communication system, closely cooperate with top-notch engineers and scientists, using the state-of-the-art tools. For a highly successful intern, who exhibits strong programming skills, we may consider facilitating a full-time position at the end of the internship.

Responsibilities:

- Developing a software framework for signal acquisition and Analog-to-Digital conversion (ADC) integrated in a sound card and/or a data acquisition unit (DAQ)
- Ensuring a seamless integration of an industrial ADC in our linux-based computational platform
- Making sure that the analog signal is acquired by ADC and the samples flow into the signal processing unit seamlessly
- Developing software for the integration between the output of the main processing unit and iridium satellite input

Qualifications/Desired Attributes:

- Proficiency in MATLAB, C and C++ programming in Linux Ubuntu environment
- Solid understanding of and experience in embedded systems and real time processing constraints
- Previous experience in Analog-to-Digital Converters is a definite plus
- Previous experience in using PCIe cards to acquire data in appropriate buffering methods is an considered an asset

Application Requirements:

This position is funded through a grant from the Clean Foundation (in partnership with Environment and Climate Change Canada) that has the following requirements of the applicant:

- Graduated from a post-secondary program in a STEM related field
- No more than 30 years of age at the start of the internship (due to funding stipulations only)
- Canadian citizen, permanent resident, or person granted refugee status in Canada
- Available to work for at least six months
- Not currently employed as a paid employee at the host organization
- Legally allowed to work according to the relevant provincial and Canadian legislation and regulations
- Not receiving employment insurance during internship

Application Process:

1. To confirm your eligibility, apply to be an intern [here](#).
2. Once your application is approved, the Clean Leadership team will invite you to upload your cover letter and resume to a personal folder.
3. As a pre-approved candidate, you will now be able to view job postings and apply to jobs of interest.
4. To apply for a job, you must email Meghan Borland (mborland@clean.ns.ca). In the body of the email, please ensure to specify which specific jobs(s) you are interested in.
5. Upon successful pre-screening, your resume and cover letter will be shared with the hiring employer. Employers will only contact you if you have been selected for an interview.
6. Once you are matched with a host employer, Clean will work with you and the host to get the required documents signed prior to the start of your internship.
7. You can start your internship once all the required documents are finalized, you can start your internship. A progress and final report are required from all interns.

We are committed to Employment Equity and our goal is to be a diverse workforce that is representative at all job levels. We welcome applicants from Indigenous People, Visible Minority Groups, Persons with Disabilities and Women in occupations of positions where they are under-represented. If you are a member of one of the equity groups, you are encouraged to self-identify on either your cover letter or resume.