



## **Postdoctoral Fellow (MITACS), Microwave Engineer, Qubic Technologies**

**Location:** Waterloo, ON, CA

**Status:** Full-Time, 2-year contract

**Start date:** September 2022

**Application Deadline:** August 23, 2022

Qubic Technologies is looking for a Postdoctoral Fellow to drive development of an innovative microwave detection system for radar and communication applications.

We are looking for a candidate with significant existing experience in microwave electronics, simulation and measurement techniques. A working knowledge of microwave antenna concepts is also important. Finally, experience with programming for instrument control and signal processing is required. The ability to work independently and to collaborate are both important. Experience in a research environment is a plus.

This position is supported by a MITACS Postdoctoral fellowship, and will be joint work between Qubic and Professor Christopher Wilson at the Institute for Quantum Computing, University of Waterloo.

### **Responsibilities and Skills**

- Microwave system design and construction
  - Microwave system design, e.g., for IQ up-conversion and down-conversion
  - Sourcing components and constructing prototype systems
- Coding
  - Programming for instrument control and data acquisition
  - Programming for digital signal processing and data analysis
- Microwave Characterization and Measurement
  - Independently perform vector network analyzer measurements
  - Independently perform pulsed microwave measurements
  - Develop new measurement techniques and protocols as needed for advanced characterization
- Microwave Antennas
  - Microwave antenna design and simulation
  - Antenna optimization for specific applications
- Regular communication with Supervisor to review and adjust priorities and workload as needed
- Management with professional contacts, suppliers and equipment, supplies and service vendors

### **Qualifications (key requisites)**

- Ph.D. completed within the last 5 years
- Knowledge and abilities in the following:
  - Microwave IQ upconversion and downconversion
  - Phase-coherent microwave techniques
  - High-speed AWGs and ADCs
  - Experience using HFSS simulations
- Commensurate experience either from advanced degree work or industry experience in the following:
  - Experience with microwave antennas
  - Two (2) or more years of experience with microwave electronics and measurement

- Three (3) or more years of experience with a modern programming language in electrical engineering or physics (or related disciplines)

### **Application**

Qualified candidates are invited to submit a resume and cover letter to Jerome Bourassa at: [jerome@qubitech.co](mailto:jerome@qubitech.co)

Applications should be submitted electronically **before August 23, 2022** and should include:

- complete CV
- cover letter describing how the candidates background, qualification and skills meet the skills and qualifications required for this position.

Please be advised that in order to be eligible for this position, all new hires must be able to pass an ITAR security assessment.

### **About Qubic**

Qubic Technologies provides safe and trusted microwave intelligence in critical situations to protect information, infrastructures and lives. We achieve this by exploiting the full potential of the microwave spectrum thanks to our innovative quantum devices and systems. Our technology will allow our clients to have more accurate knowledge of their surroundings, and relay valuable intel more privately.

