EeroQ Corporation, www.eeroq.com
Email Resume to: **recruitment@eeroq.com**
Location: 1350 N. Kostner Ave. STE E Chicago, IL 60651

Job Description: Quantum Engineer (I) - Hybrid Circuit-QED Measurement

As a Quantum Engineer at EeroQ, you will use your skills and experience in experimental quantum physics and ultra-low-temperature measurement to develop circuit QED-based devices and measurement protocols for the control and manipulation of single-electron spin qubits on the surface of liquid helium. As well as developing and maintaining state-of-the-art quantum measurement schemes, instrumentation solutions and laboratory infrastructure, Quantum Engineers will contribute to the design of new devices and nanofabrication process flows. You will collaborate with a team of engineers and scientists, using the results of your measurements and data analysis to guide the development of a new and exciting platform for quantum computing.

Required Qualifications

- PhD degree in Physics, Engineering, Applied Sciences, or related field
- Experience in one or more of the following: Superconducting resonator spectroscopy and cQED measurement techniques for superconducting qubits, spin qubits, or related systems; CW and time-domain qubit spectroscopy; Microwave circuits and techniques, IQ mixing and heterodyne detection; RF reflectometry for charge sensing; Noise characterisation in quantum systems
- Dilution refrigerator operation and maintenance, cryogenic techniques for quantum measurement
- Python programming for instrumentation, data acquisition and analysis
- Ability to work in a collaborative team environment and to communicate results effectively with the research team

Preferred Qualifications

- Knowledge of low-dimensional electron systems and electron transport measurement techniques
- Knowledge of microfabrication techniques such as optical or e-beam lithography, e-beam evaporation, sputtering, ALD, and wet or dry etching
- Finite element or numerical analysis for electrostatics, magnetostatics or RF circuit modeling (Sonnet, Ansys, COMSOL, AWS Palace, etc)
- Experience implementing machine learning and AI-assisted control for automated system calibration and adaptive experimental protocols

Key Responsibilities

- Conduct measurements at ultra-low temperatures to characterize quantum devices
- Contribute to the design and modeling of new devices and qubit control schemes
- Assist in the development of novel nanofabrication processes and device packaging solutions
- Develop key software and hardware solutions for performing quantum measurements
- Organize and analyze data and compare results with theory, presenting your findings to the research team
- Present results in peer-reviewed journals and at major conferences
- Maintain cryostats and key electronics and instrumentation, communicate with equipment and tool suppliers
- Key member of the team, interacting with a broad spectrum of scientists internally and externally

What We Offer

- Opportunity to work on cutting-edge projects in a collaborative, interdisciplinary environment
- Access to advanced computational tools and state-of-the-art facilities
- Continuous learning and professional growth in a rapidly evolving field
- Competitive salary, stock options, a comprehensive suite of benefits including full coverage of health, dental, unlimited personal coaching and 401k, catered team lunch every Friday, generous maternity and paternity leave

EeroQ is proud to be an equal opportunity workplace. In compliance with federal law, all persons hired will be required to verify identity and eligibility to work in the U.S., and complete Form I-9.