

Research Associate

Position Details

Position Information

Position Title	Research Associate
Department/Unit	Mathematics & Statistics
Research Project	Dependent Type Theory for Verified Quantum Software
Location	Halifax
Posting Number	GP71-20
Employee Group	Grant-Paid
Position Type	Term
Duration of Contract (if applicable)	2 year term
Employment Type	Full Time
Full-time Equivalency (FTE)	1.0
Salary	\$37,050 - \$50,000 per annum (37.5 hours per week)

About the Organization

The Department of Mathematics and Statistics at Dalhousie University is a research-intensive department with 42 faculty members and numerous postdocs and graduate students. The Research Associate will work on a research project entitled "Dependent Type Theory for Verified Quantum Software."

Job Summary

Reporting to the Principal Investigator, the Research Associate will be responsible for the design, semantics, and meta-theory of a functional programming language for quantum computing and use the language to investigate questions in quantum information theory.

Key Responsibilities

- Apply methods of type theory and lambda calculus to the design and implementation of a type-safe functional quantum programming language.
- Use category theory, modal logic, and fibrations in the development of formal semantics and other meta-theory of the language.
- Investigate the use of dependently typed lambda encodings in quantum programming language design.
- Interact with team members at Dalhousie University.
- Travel to attend site visits, program workshops, or for collaborations as directed.
- Publish research results in appropriate journals and other recognized media.

Note

Qualifications

Ph.D. in Mathematics or Computer Science with at least five years of related research experience in dependent type theory and lambda calculus. Experience in the design and implementation of quantum programming languages, dependently typed lambda

encodings, and the categorical semantics of quantum programming languages is required.

All qualified candidates are encouraged to apply; however, Canadians and Permanent Residents will be given priority.

Additional Information

Dalhousie University supports a healthy and balanced lifestyle. Our total compensation package includes a voluntary RRSP, health and dental plans and an employee and family assistance program.

Application Consideration

We thank all applicants for their interest, however, only candidates selected for an interview will be contacted.

Diversity Statement

Dalhousie University is committed to fostering a collegial culture grounded in diversity and inclusiveness. The university encourages applications from Indigenous persons, persons with a disability, racially visible persons, women, persons of a minority sexual orientation and/or gender identity, and all candidates who would contribute to the diversity of our community. For more information, please visit www.dal.ca/hiringfordiversity.

Posting Detail Information

Number of Vacancies	1
Open Date	11/05/2020
Close Date	12/12/2020
Open Until Filled	No

Special Instructions to Applicant

Quick Link for Direct Access to Posting <http://dal.peopleadmin.ca/postings/4668>

Documents Needed to Apply

Required Documents

1. Résumé / Curriculum Vitae (CV)

Optional Documents

1. Cover Letter