

**GRANT- PAID JOB OPPORTUNITY
Dalhousie University, Halifax, Nova Scotia**

**Research Associate
Department of Mathematics and Statistics
POSTING NUMBER: GPD-71-20**

Position Summary:

Dalhousie University invites applications for a Research Associate position in mathematics from outstanding candidates with a strong background in dependent type theory and the categorical semantics of quantum programming languages.

The Research Associate will work on a research project entitled “Dependent Type Theory for Verified Quantum Software.” 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.

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.

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.

Status: 37.5 hours/week (full-time)

Pay Scale: \$37,050 - \$50,000 per annum

Duration of Contract: January 1, 2021 to December 31, 2022

Deadline for application: December 12, 2020.

For additional information and to apply for this position please submit a Résumé / Curriculum Vitae (CV) and optional cover letter via: <http://dal.peopleadmin.ca/postings/4668>

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

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

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.