

WE ARE HIRING!

PhD Student: Industrial Engineering

Please email your application to
daltrac.comms@dal.ca.

Application should include:

- cover letter
- resume
- two writing samples/publications
- two references

Climate Action and Awareness Fund (CAAF): Development of a Bottom-up, Activity-based Transport Network and Emissions Modelling System

Fully Funded PhD Positions in Industrial Engineering

Dalhousie University, located in Halifax, Nova Scotia, is one of Canada's top research-intensive universities, pioneering research in a wide array of disciplines. Dalhousie University houses the Dalhousie Transportation Collaboratory (DalTRAC), a CFI-sponsored multidisciplinary research facility dedicated to advancing transportation engineering and planning research.

DalTRAC is leading a multi-year project sponsored by Climate Action and Awareness Fund (CAAF) that advances a theoretical and empirical foundation for multi-scale integration of transport and emission models within urban systems modelling for multiple Canadian cities. The project will combine cross-cutting expertise from scholars and practitioners to advance data-driven, integrated urban systems modelling techniques for emissions estimation, a critical next step yet to be fully materialized to develop a standardized transport and emission modelling approach. The data, methods and tools developed in this project will provide a geo-temporally resolved understanding of emissions and inform policymaking to achieve Canada's goal of net-zero GHG emissions by 2050. More information on DalTRAC's research projects and publications can be found at: <https://www.dal.ca/sites/daltrac.html>

Research Opportunities:

DalTRAC is seeking candidates for multiple fully funded PhD positions. Successful applicants will have the opportunity to work directly under the supervision of Dr. Ahsan Habib and Dr. Hamid Afshari, and contribute to one to several research topics in alignment with the lab's research activities. The research areas include, but are not limited to:

1. Advancing integrated transport, supply chain, and emissions modelling,
2. Activity-based, tour-level travel demand modelling, passenger and goods movement modelling and simulation,
3. Econometric modelling and statistical analysis of travel behaviour and land-use decisions,
4. Advancing the model integration process for an operational bottom-up transport modelling system,
5. Artificial intelligence and machine learning in travel behaviour modelling, and
6. Application of optimization methods for integrated modelling system.

DalTRAC actively collaborates with researchers across a variety of disciplines locally and nationally. The lab also partners with local, regional, provincial, and federal government agencies and consulting groups for a variety of research projects. The selected PhD students will have ample opportunities to collaborate with industry partners and scholars locally and nationally. They will also have the opportunity to publish primary authored research articles and attend research conferences. More information on DalTRAC's research projects and publications can be found at:

<https://www.dal.ca/sites/daltrac.html>

Position Information:

- The expected start date for the successful applicants will be September 2024 or as soon as possible thereafter
- The candidates must hold a Masters in Industrial Engineering or a related field (e.g., computer science, geomatics, Civil engineering, urban planning)
- Knowledge in computer programming, optimization techniques, statistical analysis, and econometric modeling would be beneficial
- Expertise in software such as GIS would be an asset
- Experience in programming languages, such as C#, R, and Python would be an asset
- Highly motivated and enthusiastic about transportation emission, and climate action sciences

Program Overview:

<https://www.dal.ca/faculty/engineering/civil-resource/programs/graduate-studies/civil-engineering.html>

Applications:

Please apply by sending your CV, transcript(s), and peer-reviewed journal/conference publications or writing samples you may already have. Send all documents to: **Taylor Oliver (daltrac.comms@dal.ca)** Project Coordinator, Dalhousie Transportation Collaboratory (DalTRAC). The subject line of your email should be: **DalTRAC PhD Firstname Lastname**. Only shortlisted candidates will be contacted for interviews.