FORAC Research Consortium
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MASTER RESEARCH PROJECT (M.Sc.)

Reengineering the Fibre Supply Network to Support Decarbonization

FRENCH LANGUAGE	Although most of our research team at the FORAC consortium are fluent in English and can facilitate your arrival at Université Laval, our students are expected to be able to communicate in French within the first year of their arrival in Quebec City.
Research domain:	Logistics, decision support system, optimization, transportation, forest products industry
Prior education:	Operations management, industrial engineering, mechanical engineering, or another relevant field
Research context:	The FORAC research consortium is a strong partnership between stakeholders in the forest products industry (businesses and governments). Based at Université Laval (Quebec City, Canada), we offer our partners world-class multidisciplinary research expertise. We bring together expertise in the fields of forest engineering, wood engineering, industrial engineering, mechanical engineering, administrative sciences and computer science. Our mission is to support the forest products industry in the design and effective management *from the forest to the customer*. FORAC aims to be a Canadian and international reference in the field of integration and optimization of the value creation network. Researchers are developing decision support and decision support methods that leverage the potential of data to improve planning, coordination and control of operations across all business lines (forest operations, transport and logistics, processing plants, etc.).
Project description:	More companies are now using electric vehicles for their logistics activities (Naseri et al., 2023). However, this form of transportation is not without constraints, including limited vehicle availability, charging requirements, high maintenance costs, etc. (Froger et al., 2021). This M.Sc. aims to rethink an organization's fibre supply logistics in order to identify electrified transportation options that can reduce its carbon footprint. The work will, among other things, explore current and emerging modes of transportation used to move fibre and model, from both economic and environmental perspectives, the impacts of using each transportation mode. Finally, an analysis will be conducted in collaboration with a selected organization to identify the most promising transportation modes and develop recommendations regarding those to adopt in the future in line with a target overall carbon footprint. Expected Start date: 2027-01-11
Financing:	Scholarship of $ 22,900 scholarship per year for a length of 5 full-time sessions (i.e. one year and two semesters. This scholarship is indexed once a year. Participation bonuses of up to $5,250 annually are available. Additional funds are available to cover the costs of participation in international conferences (with article) and travel expenses (collaboration with partners, industrial visits, field study).
To apply:	Interested candidates can apply by sending their application (*including: CVs, transcripts and motivation letter*) to the following email address: recrutement@forac.ulaval.ca or contact the professor to discuss the project directly: Bobin Wang, Assistant Professor, Faculty of Science and Engineering, bobin.wang@gmc.ulaval.ca