FORAC Research Consortium
Pavillon Adrien-Pouliot, Université Laval
Québec (Québec), Canada, G1V 0A6
www.forac.ulaval.ca

MASTER RESEARCH PROJECT (M.Sc.)

Collaborative Opportunities in Logistics Systems

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:	Forestry, decision support systems, planning/optimization
Prior education:	Forestry, Industrial Engineering
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:	Before being processed, forest resources must first be harvested and then transported to mills. There are often opportunities for collaboration to carry out these activities more efficiently and reduce costs. However, such collaborations are difficult to implement due to differing cooperation strategies, the presence of sensitive information, and competitive dynamics among stakeholders. This master's research project aims to design an analytical decision-support framework to identify, evaluate, and implement collaboration opportunities in wood harvesting and transportation. The project will combine industrial case studies with quantitative modelling approaches to develop a general collaborative optimization model capable of identifying high-value cooperation strategies. A key component of the research will be the integration of benefit-sharing mechanisms that account for operational constraints and competitive considerations. The objective is to ensure that collaborative solutions are not only efficient but also equitable and practically implementable. Expected Start date: As soon as possible
Financing:	Scholarship of $ 22,500 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: Mikael Rönnqvist, Full professor, Faculty of Science and Engineering, mikael.ronnqvist@gmc.ulaval.ca