FPInnovations®

**EMPLOYMENT OPPORTUNITY**

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# Research Scientist in Advanced Motion Systems for Field Robotics

## Pointe-Claire, Québec

**Who we are**

FPInnovations is among the world's largest private, non-profit forest research centers. The organization helps the Canadian forest industry to develop path-breaking solutions based on the unique attributes of Canada's forest resources, favoring a sustainable development approach and taking full advantage of the industry's considerable scientific, technological and commercial capital. It is ideally positioned to perform state-of-art research, develop advanced technologies, and deliver innovative solutions to complex problems in every area of the sector's value chain.

**Where we are heading**

FPI is in the forefront in providing cutting-edge remote sensing solutions to ease forest operations. We combine platforms and integrate multiple sensors. Being a forward looking team, we want our research scientists to shape the future. Currently we are offering amazing opportunities to transform the forest sector into a robotic space geared by real-time remote sensing solutions. By developing new fields of expertise related to computer vision, sensor fusion, 2D and 3D tracking through simultaneous localization and mapping (SLAM), and visual odometry we intend to demonstrate practical benefits of field robotics applied to the forest environment and forest industry.

**What we are looking for**

The candidate is a well-rounded scientist with a passion and solid track record for computer vision, sensor fusion, pattern recognition and 3D motion analysis for field robotics. In his field of expertise, he will be responsible for delivering national research projects and industrial contracts aimed at developing and implementing automation and field robotics applications based on real-time remotely sensed information. He will also coordinate our internal and external efforts in the development of applications to solve critical applied challenges for the Forestry 4.0 and other national initiatives.

For the purpose of some projects, the Advanced Motion Systems Scientist will also need to conduct field experiments at various forest sites, develop and test prototypes, assist in technology transfer; consequently, will be closely collaborating with staff throughout FPInnovations as well as with universities across Canada. The successful candidate will have a strong client and value focus, and will be able to work efficiently in team. Proven track record of working with industrial clients is highly appreciated.

**What you will do**

The Advanced Motion Systems Scientist's responsibilities will consist of the following, among others, to:

- Dive into applied forest industry domains and thoroughly understand our client's critical challenges;
- Define new concepts, pursue R&D activities, and cooperate with internal and external resources to create innovate solutions to these challenges by applying your skills;
- Build prototypes – bringing concepts to initial implementations – including design, coding to testing;
- Apply and reshape prototypes based on clients' needs and drive toward successful deployment;
- Assist with proposal development and securing additional revenues;
- Help in coordinating our effort in field robotics with university networks;
- Demonstrate financial responsibility in carrying out your own projects, while participating in others' projects as well;
- Contribute to large research initiatives within his area of expertise;
- Respond to FPI members' and employees' technical inquiries;
- Discuss issues or trends within area of expertise to raise client and/or FPI awareness;
- Transfer technology and knowledge related to your projects through reports, handbooks, and workshops, presentations to members, clients and general conferences;
- Show willingness to perform a variety of tasks and support the program to achieve its objectives;
- Continuously learn new technology areas that are mission-aligned to the R&D Centre of Excellence;
- Play a key role in developing new ideas, processes and areas of research, and continually search for creative, innovative and integrated ideas;
- Actively contribute to the technology community and establish external reputation as expert.

**Who you are:**

- Master's degree or PhD in Mechanical engineering, Mechatronics, Computer Sciences or related field of expertise, or an equivalent combination of education and experience;
- Great at solving problems, debugging, troubleshooting, designing and implementing solutions to complex technical issues and has a knack for driving impact and growth;
- Training and industry experience with computer vision, tracking, odometry, SLAM, and motion systems;
- With strong mathematical foundation, you are familiar with image analysis, pattern recognition, signal processing, feature matching and motion estimation;
- Familiar with multi sensor fusion (monocular / stereo/ RGB-D, lidar IMU etc);

- Solid programming skills and good knowledge of scripting languages and open source library;
- Familiarity with the Canadian forest operations or other rugged environment for robotic and automated applications is desirable;
- Good work planning, organization and project management skills;
- Bilingualism (French and English), both verbal and written communication skills;
- Proficiency in the research planning process and an aptitude for writing high-quality technical reports;
- Strong client and value focus is essential;
- Independent, self-starter with equal teamwork skills;
- Able to adapt to constantly changing demands and handle complex interactions and variables;
- Availability to travel.

**Please submit your resume to:**

Recruitment_recrutement@fpinnovations.ca

**IMPORTANT: please indicate the reference number 332 in the subject line.**