Université du Québec à Trois-Rivières

Copy of CALL FOR APPLICATIONS - Canada Impact+ Research Chairs (75447)

Université du Québec à Trois-Rivières

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1 Position available

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JOB DESCRIPTION

Posted from February 23 to March 26, 2026

Please send your application to the following address:
http://www.uqtr.ca/CRC_Declaration_volontaire

Title: Canada Impact+ Research Chairs

The Université du Québec à Trois-Rivières (UQTR) is seeking applications from researchers for the 2026 CANADA IMPACT+ RESEARCH CHAIRS competition on the theme of cognitive systems applied to smart manufacturing.

The digital transformation of the manufacturing sector is an essential lever for economic competitiveness, industrial sovereignty, and the transition to a sustainable economy. The integration of advanced technologies — including artificial intelligence, cyber-physical systems, digital twins, the Industrial Internet of Things, and automation — is profoundly redefining production and decision-making methods. It is enabling the emergence of interconnected, adaptive, and autonomous industrial systems capable of responding to market volatility and supply chain complexity. This evolution, combined with the smart industry paradigm, aims to

create interconnected, adaptive, and autonomous production systems capable of responding to the demands of volatile markets and complex supply chains.

In this context, cognitive systems represent a decisive step forward. They equip industrial infrastructures with the ability to perceive, learn, reason, and act autonomously or collaboratively with humans. By combining artificial intelligence, advanced analytics, knowledge modeling, and intelligent robotics, they transform the factory into a socio-technical system where humans and machines cooperate in hybrid decision-making loops. This evolution goes beyond traditional automation by introducing capabilities for adaptation and anticipation.

Cognitive systems enable real-time optimization of industrial processes. Through continuous analysis of data from sensors and equipment, they dynamically adjust production parameters, improve quality, reduce losses, and optimize energy consumption. They also support augmented decision-making by simultaneously evaluating multiple scenarios and providing explainable recommendations to operators.

They also contribute to fault prediction and industrial resilience. By detecting anomalies and signs of deterioration early on, they enable predictive and prescriptive maintenance, limiting unplanned downtime and extending equipment life. In addition, they ensure the intelligent orchestration of distributed production systems, coordinating resources, flows, and planning in interconnected industrial networks.

These transformations simultaneously improve industrial productivity, flexibility, and sustainability. Cognitive systems promote resource efficiency, waste reduction, and energy optimization, contributing to the circular economy and reducing carbon footprints. They also facilitate the rapid adaptation of production lines to new products or volumes, strengthening the competitiveness of businesses.

For Canada, the development of smart manufacturing is part of national strategic priorities such as productivity, technological sovereignty, energy transition, critical infrastructure security, and sustainable development. Strengthening capabilities in industrial cognitive systems can thus position the country as a leader in smart industry while modernizing its manufacturing value chains.

However, several major challenges remain. It is necessary to design robust, explainable, and secure cognitive systems for critical industrial environments. The integration of artificial intelligence into cyber-physical systems requires new architectures and engineering methods that guarantee reliability and security. Human-machine collaboration raises issues of ergonomics, trust, skills, and work organization. The management of massive, heterogeneous, and sensitive industrial data requires sovereign and interoperable infrastructures. Finally, cybersecurity and the resilience of smart industrial systems are becoming priorities in the face of increasing connectivity.

The transformation of manufacturing also involves organizational challenges related to the orchestration of digital industrial ecosystems. It requires close collaboration between companies, research centers, and public institutions, as well as innovation platforms and data-sharing frameworks.

In light of these challenges, developing world-class expertise in cognitive systems for smart manufacturing is a strategic priority for Canada. By consolidating its scientific, technological, and industrial capabilities, the country will be able to strengthen its technological sovereignty, increase manufacturing productivity, and accelerate the transition to a sustainable, resilient, and competitive industry.

The holder of the Impact+ Chair will find a particularly dynamic, interdisciplinary research environment at the Université du Québec à Trois-Rivières (UQTR) that is closely connected to industrial and scientific ecosystems, both in Canada and internationally. This environment is characterized by a strong culture of interdisciplinary collaboration, proximity to industry, and a recognized ability to support technological innovation and knowledge transfer. The Chair will also benefit from an exceptional setting thanks to its strategic integration with the National Center for Intelligent Manufacturing (CNIMI), a center affiliated with UQTR and recognized as a major catalyst for digital transformation and manufacturing innovation in Canada.

The CNIMI offers a cutting-edge research and innovation ecosystem in smart manufacturing. It provides advanced infrastructure and integrated experimental platforms covering robotics, automation, artificial intelligence, the Industrial Internet of Things, and cyber-physical systems. These facilities enable the design, demonstration, and validation of solutions under real industrial conditions, which is a major strategic advantage for the development and evaluation of emerging technologies. The Center also provides access to a vast network of industrial partners — including SMEs, large companies, research centers, and government organizations — as well as proven capabilities in technology transfer and industrial-scale deployment.

The successful candidate will be able to draw on the combined multidisciplinary expertise of UQTR and CNIMI in artificial intelligence, data science, cyber-physical systems, and industrial engineering, as well as their research infrastructure in automation, robotics, and digital systems. The experimental platforms for digital twins and the Industrial Internet of Things, as well as structured collaborations with national and international partners in Industry 4.0 and digital transformation, will provide fertile ground for the development of ambitious, high-impact projects.

This close integration between the university and CNIMI creates a unique environment covering the entire continuum of innovation, from fundamental research to applied research, from experimentation to industrial validation, to technology transfer and large-scale deployment. The Canada Impact+ Research Chair will be fully aligned with the *UQTR's Strategic Research Plan (2020-2027)*, particularly in terms of technological and industrial innovation, digital transformation, applied artificial intelligence, sustainable industrial productivity, and the training of highly qualified personnel.

Objective of the chair:

The holder of the Canada Impact+ Research Chair will develop a world-class research program focusing on cognitive systems applied to smart manufacturing.

The expected research will focus on:

- Industrial cognitive architectures
- Artificial intelligence for manufacturing systems
- Cognitive digital twins
- Human-machine collaboration
- Resilience, security, and sustainability of smart industrial systems
- Industrial transformation and socio-economic impact

The Canada Impact+ Research Chairs Program:

The Canada Impact+ Research Chairs Program aims to support educational institutions that wish to recruit world-renowned researchers whose work addresses critical national and global issues. The Program emphasizes both excellence and the tangible impact of research. Impact+ Research Chair holders will receive long-term funding and institutional support to advance

ambitious and transformative projects in Canada's strategic priority areas, build and support exceptional research teams, and collaborate with partners from all sectors and countries. Impact+ Research Chair holders are expected to promote the transformation of discoveries into concrete applications and direct benefits that will benefit Canada and the world socially and economically, while training the next generation of highly qualified personnel.

The program specifically aims to:

- Strengthen Canada's ability to attract the world's best researchers in order to be at the forefront of research in priority areas for the social and economic benefit of Canadians.
- Build critical knowledge in priority research areas identified by the government.
- Create a competitive research environment to help Canadian institutions attract the world's best researchers as they conduct research of exceptional quality.
- Make Canada a preferred location for world-class research in science and technology, in conjunction with other federal programs that have similar objectives.

Impact+ Chairs are awarded following a highly competitive and rigorous two-stage selection process involving peer review. Impact+ Chairs are awarded for a period of eight years and are not renewable. Each chair comes with annual funding of $500,000 or $1 million per year, which is received and administered by Canadian institutions. Impact+ Chairs also come with the possibility for the chairholder to apply for funding from the Canada Foundation for Innovation for the acquisition of equipment.

Commitment to equity, diversity and inclusion:

UQTR is committed to providing an equitable, diverse, and inclusive environment that is essential to the development of innovative knowledge and technologies. That is why UQTR is committed to complying with federal non-discrimination and employment equity policies. UQTR particularly encourages women, Indigenous peoples, racialized peoples, people with disabilities, and members of the 2ELGBTQIA+ communities to apply. In accordance with the law, the University subscribes to an equal opportunity employment program. Upon request, the recruitment process can be adapted to the needs of individuals with disabilities. You can contact Ms.Geneviève Côté, an EDI advisor, who can offer you an accessible process if you have a hearing impairment or are hard of hearing, if you have mobility barriers, or if you are neurodivergent, among other conditions. (Genevieve.Cote@uqtr.ca)

Selection process:

Each application will first be evaluated by a committee of experts responsible for identifying candidates who adequately meet the selection criteria of the University and the Canada Impact+ Research Chairs Program. Applications that move on to the next stage will be reviewed by a committee that ensures that the University's guidelines and objectives for equity, diversity, and inclusion have been taken into account. Since the creation of this position is subject to the University's approval, candidates must also follow a departmental hiring process. The successful candidate will be invited to submit a full application to the Canada Impact+ Research Chairs Program in mid-June 2026 and, if the chair is awarded, will be offered a tenured faculty position.

The University recognizes that various life circumstances such as illness, disability, family or community responsibilities (maternity, parental, sick leave, leave to care for family members, slowdowns due to chronic illness or disability, long-term effects of COVID-19, etc.) may affect the scientific output of applicants. These impacts will be carefully considered during the evaluation process.

Useful links:

- For more information on Canada's Impact+ Research Chairs Program, visit: https://www.canada.ca/en/impact-plus-chairs.html
- For more information on UQTR, visit: https://www.uqtr.ca/index.shtml
- For more information on research at UQTR, visit: https://www.uqtr.ca/recherche/index.shtml
- For more information on accommodations that may be available to individuals with disabilities, contact Annie Dubois at the UQTR Human Resources Department at srh@uqtr.ca

UNIVERSITY REQUIREMENTS:

Education:

According to UQTR requirements, the successful candidate must hold a doctorate (Ph.D.) in a field of expertise closely related to the research topics mentioned above, hold the title of full professor, or be in the process of becoming a tenured professor. The Université du Québec à Trois-Rivières is a French-speaking institution. The successful candidate must therefore have sufficient knowledge of the French language or be determined to learn it once in the position. UQTR offers support for learning French. Teaching experience is also an asset.

Required documents:

Those wishing to apply are invited to submit their application before **March 26, 2026 at 23 h 59 p.m. to the following address:** http://www.uqtr.ca/CRC_Declaration_volontaire

The application must include:

- A cover letter (maximum 2 pages)
- A curriculum vitae, including a list of publications from the last five years as well as a few examples or copies of significant contributions in the targeted field
- Details on the specific circumstances that may have led to a slowdown or interruption in their research activities
- A brief description of the research program related to the chair (maximum 2 pages)
- A description (maximum 1 page) of the infrastructure required to carry out the work planned for the chair
- The names of three experts willing to provide a letter of support for their application.

All required documents must be submitted in a single PDF file using the online voluntary declaration form available at this address: http://www.uqtr.ca/CRC_Declaration_volontaire

Salary: Salary is determined in accordance with the UQTR collective agreement for professors, and Canada Research Chair holders are eligible for an annual bonus of up to 20% of their salary.

All applications will be treated confidentially.

UQTR is committed to becoming a fully equitable, diverse, and inclusive (EDI) university. To this end, it is taking active and rigorous measures to identify and prevent systemic barriers and ensure the high caliber of students, interns, and faculty members from underrepresented groups seeking equity and rights, including racialized people, African, Caribbean, and Black people, Indigenous peoples, people with disabilities, women, and members of the 2ELGBTQIA+ communities, so that these individuals can contribute fully to the research program. UQTR

invites individuals from these underrepresented groups to apply. In accordance with the law, the University subscribes to an equal opportunity employment program. Upon request, the recruitment process can be adapted to the needs of people with disabilities. Confidentiality of information is taken seriously.

BENEFITS

Assurances collectives et régime de retraite

Salaire compétitif

Salaire compétitif

Campus vert proche de tous les services

Job type

Application Bank / Full-time

Required documents

CV