Full Professor and Killam Memorial Chair in Robotics for Healthcare Applications
University of Alberta

Job Title	Full Professor and Killam Memorial Chair in Robotics for Healthcare Applications
Department	Electrical and Computer Engineering
Institution	University of Alberta Edmonton, Alberta
Date Posted	Sep. 9, 2024
Application Deadline	Open until filled
Position Start Date	Available immediately
Job Categories	Endowed/Distinguished Professor Professor
Academic Field(s)	Electrical and/or Electronics Computer Engineering Bioengineering (all Bio-related fields) Mechanical Engineering
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Job Description

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The Department of Electrical and Computer Engineering in the Faculty of Engineering at the University of Alberta is seeking applications for a tenured Full Professor position in Robotics

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for Healthcare Applications, with the potential for a cross-appointment in the Department of Biomedical Engineering.

This position is a part of the Association of the Academic Staff of the University of Alberta (AASUA). The University offers a competitive salary and a number of other supports.

The successful candidate will also be appointed as a Killam Memorial Chair at the University of Alberta. Dorothy J Killam endowed the University of Alberta with Chair positions in engineering or science research. These appointments are designed for scholars acknowledged by their peers as international experts in their fields. These positions expect incumbents to contribute significantly to research and scholarship, possess exceptional research capabilities, be senior research leaders, promote interdisciplinary research, and enhance the university's research profile.

The Chair is tenable for 5 years and renewable once. Appropriate salaries and other financial arrangements will be negotiated by the Vice-President (Research) and budgetary provisions will be made from general University (i.e., non-Killam Chair) resources for secretarial and technical services for the Chairholder.

Applications are invited from scholars in areas related to medical robotics, including the development of advanced assistive robotic systems for surgery, therapy, or post-disability neuro-rehabilitation. This includes, but is not limited to, shape-shifting and soft medical devices that are wearable, implantable, or transplantable, leveraging biocompatible materials or bio-inspired principles, and capable of intelligent environmental interactions such as sensing or manipulation. Example research areas include, but are not limited to, surgical systems capable of autonomous soft-tissue manipulation to actively navigate the complex geometry of the human body, intelligent exosuits for people with disabilities, or smart artificial organs, limbs, and skin for patients in need of transplantation or augmentation. If you are a scholar in any of these areas or in similar applications who seeks to join a Faculty with a growing focus on the healthcare applications of robotics, we welcome your application!

The successful candidate will have a PhD in Electrical Engineering, Biomedical Engineering, Mechanical Engineering, or Computer Engineering. They are expected to be a licensed Professional Engineer in Canada or to become a licensed Professional Engineer through the Association of Professional Engineers and Geoscientists of Alberta (APEGA, https://www.apega.ca/). Licensure must be obtained within five years of the date of hire.

The successful candidate will also have the opportunity to collaborate with researchers at various centres of expertise at the University of Alberta including, but not limited to, Amii (Alberta Machine

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Intelligence Institute), Institute for Smart Augmentative and Restorative Technologies (iSMART), Women and Children's Health Research Institute (WCHRI), Institute for Reconstructive Sciences in Medicine (iRSM), Cross Cancer Institute, Glenrose Rehabilitation Hospital, and Mazankowski Alberta Heart Institute.

The successful candidate may also be nominated for a Canada CIFAR Artificial Intelligence (CCAI) Chair by the Alberta Machine Intelligence Institute (Amii). Amii is one of three institutes named in the Pan-Canadian AI Strategy and represents more than 35 artificial intelligence (AI) & machine learning (ML) researchers at the U of A, as well as CCAI Chairs at post-secondary institutions across Western Canada. The CCAI Chair includes research funding for at least five years.

The successful candidate will join a dynamic team of faculty contributing to the newly approved Mechatronics and Robotics Co-Op undergraduate program, set to launch in Fall 2025. This program, developed with a strong emphasis on system design, hands-on learning, and co-op education, efficiently integrates electrical, mechanical, and computer engineering to train the next generation of experts in mechatronics and robotics. The new faculty member will have the opportunity to shape and teach courses within this curriculum, contributing to its success while benefiting from the active student engagement in robotics and mechatronics. This involvement will provide a fertile environment for advancing research in robotics and mechatronics, e.g., through collaboration with highly motivated students participating in design project courses.

The candidate will have a research record commensurate with that of a Full Professor at the University of Alberta. For research, this includes a highly-cited body of work published in top peer-reviewed journals and conference proceedings, a record of securing major research and infrastructure funding, and a record of establishing partnerships with industry. They will be an established and respected instructor with experience at the undergraduate and graduate levels. Their record of service and leadership will show a history of going above and beyond in collegial and professional activities related to their research, teaching, industry, and equity, diversity, and inclusion.

The University of Alberta is committed to an equitable, diverse, and inclusive workforce. We welcome applications from all qualified persons. We encourage women, First Nations, Metis and Inuit persons, members of visible minority groups, persons with disabilities, persons of any sexual orientation or gender identity and expression, and all those who may contribute to the further diversification of ideas and the University to apply.

As we build our team, we recognize that our people are and will continue to be our greatest strength. The successful candidate will join one of the top Engineering programs in Canada. We help students

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develop the skills they need to dream of and invent the technology of the future through hands-on experiences in state-of-the-art labs with instruction from skilled faculty members. We have world-class research and teaching facilities and a range of research and education programs.

The Electrical and Computer Engineering Department has more than 60 faculty members with expertise in the areas of Electrical Engineering, Computer Engineering, Software Engineering, and Intelligent Systems. The Department welcomes creativity, diversity, perseverance, and a collaborative spirit, and recognizes the importance of excellence in conjunction with work/life balance, interdisciplinary research, and mentorship. The Department is co-developing a new undergraduate mechatronics program with the Department of Mechanical Engineering that is under governance review and aims to be launched in about one year.

The Biomedical Engineering Department offers students interdisciplinary research opportunities and state-of-the-art facilities to take their ideas from imagination to application. The Department currently offers a Master of Science (M.Sc.) and a Doctor of Philosophy (Ph.D.) program in Biomedical Engineering, and the Department is expanding to offer a Master of Engineering (M.Eng.) in Biomedical Engineering. Working with medical professionals, our world-class researchers design systems, software, and devices that save lives today and improve the healthcare landscape of tomorrow.

The new faculty members will have the opportunity to work with a group of robotics faculty members in the departments of Electrical and Computer Engineering, Mechanical Engineering, and Computing Science. The existing expertise at the University of Alberta include surgical robotics, rehabilitation and assistive robotics, wearable robotics, aerial and mobile robotics, manufacturing robotics, human-robot interaction and interfaces, human movement analysis, haptics and telerobotics, cooperative autonomous systems, computer vision, robot control, robot learning and computational intelligence for robotic systems, to name a few. The University of Alberta exists to inspire and ignite the human spirit in pursuit of a better tomorrow. Its work is rooted in its commitment to equity, diversity, and inclusion while honoring Indigenous identities, languages, cultures, and world views. As one of the world's top 100 teaching and research universities, the University of Alberta ranks among the top 5 in Canada, providing a $19.4 billion annual economic impact in Alberta alone. The University of Alberta seeks to challenge, to change, and to always be Leading with Purpose.

More than 44,000 students and 13,000 staff shape the University of Alberta, with outstanding achievements in learning, research, creativity, innovation, and engagement across five campuses - including one rural and one francophone. The University of Alberta attracts top talent in rigorous undergraduate, graduate, and professional programs in 17 faculties across three colleges and receives more than $600 million in annual sponsored research revenue. The University has over 300,000

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alumni worldwide.

Working and Living Here

Our Faculty Culture

The Faculty of Engineering believes that innovation, professionalism, and excellence in engineering stem from those who value perspectives and people. Collaboration, mentorship, creating meaningful change in society, and going above and beyond to help others in all aspects of our roles - research, teaching, and service - are core to all of us.

Lead Pioneering Research: With a substantial endowment, our Chairholders make significant contributions to the sciences and act as major catalysts for interdisciplinary research. These appointments are designed for scholars acknowledged by their peers as leading international experts in their fields. You will have access to robust resources and state-of-the-art facilities dedicated to expanding the frontiers of robotics in healthcare.

Enjoy Collaborative Spaces: Our dynamic research environment is being reconfigured to foster collaboration and innovation. You will engage with top-tier researchers from diverse fields, leveraging collective expertise to tackle complex challenges.

Benefit from Comprehensive Support: The University of Alberta provides extensive support including competitive salaries, a collaborative research environment, and secretarial as well as technical services. Chairholders also receive structured support for grant applications and opportunities for continuous professional development.

Benefits, Health, & Wellness

We offer a health and wellness benefits package that includes a health spending account, parental leave, and pension benefits. For Faculty members, some moving and relocation expenses may be reimbursed. Spouses/partners are offered employment services through the University's Spousal/Partner Employment Program. The campus offers a medical clinic, and there are multiple childcare and housing options within steps of campus.

Life in Edmonton

Edmonton is home to over one million people and Alberta's capital. Edmonton offers a vibrant start-up and technology ecosystem, federal and provincial government offices, the Corporate Offices of the

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provincial healthcare system, and an international airport. Edmonton has also a growing biotechnology industry with notable companies including Pulsemedica https://www.pulsemedica.com/, Smilesonica https://smilesonica.com/, Health Gauge https://www.healthgauge.com/, Applied Pharmaceutical Innovation, https://appliedpharma.ca/, 48 Hour Discovery https://48hourdiscovery.com/, and more. The city offers the amenities of a large urban centre while maintaining a friendly atmosphere. Several faculty members live in nearby neighborhoods within walking and biking distance of the University offering a range of multi and single-family homes and having close-by schools within one of Canada's top provincial school systems. Edmonton is known internationally for its thriving arts and festival scene with one of North America's largest stretches of urban parkland, and top-ranked health care services.

We invite you to visit these websites for information about the:

- University of Alberta (www.ualberta.ca/faculty-and-staff/index.html),
- Academic Staff Benefits (https://www.ualberta.ca/human-resources-health-safety-environment/benefits-and-pay/benefits-and-pension/benefits-overview/academic/index.html),
- The Faculty of Engineering (www.ualberta.ca/engineering/index.html), and
- The City of Edmonton (https://exploreedmonton.com/)

Application Instructions

Please apply online and submit the following documents :

1. A cover letter that includes highlights of your profile
2. Curriculum vitae (CV)
3. Research statement that outlines the main areas of current research and short- and long-term research goals, including a list of publications and conference presentations. (submit under "Research Plan")
4. Up to 3 samples of recent peer-reviewed research publications that you would like to highlight for the committee. (submit under List of Publications)
5. Teaching dossier that includes a brief teaching philosophy, evidence of, or potential for, teaching effectiveness, and sample course outline(s) (submit under Interests)
6. Equity, diversity, and inclusivity (EDI) statement that outlines the candidate's philosophy, experience, training, and future interests and goals in these areas related to research, teaching, and service. The future interest and goals section should be aligned with institutional and disciplinary strategies, including the University of Alberta's Strategic Plan for Equity, Diversity, and Inclusivity: https://www.ualberta.ca/equity-diversity-inclusion/strategic-plan-for-edi/index.html; and Engineers Canada's Strategy: https://engineerscanada.ca/diversity/about-diversity-in-engineering; (2 pages

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maximum - submit under EDI Philosophy)

- From applicants selected for interviews only: Letters of reference from 3 referees will be requested.

As part of the Temporary Foreign Worker Program requirements, the university must conduct recruitment efforts to hire Canadians and permanent residents before offering a job to a temporary foreign worker. To ensure we remain in compliance with these regulations, please include the appropriate statement in your application "I am a Canadian Citizen/Permanent Resident" or "I am not a Canadian Citizen/Permanent Resident".

We invite requests for reasonable accommodations and inquiries about accessibility from candidates during the recruitment process in line with the University's Accommodations Policy. For a confidential conversation, candidates should contact Evan Ramage (evan.ramage@ualberta.ca) with the job posting number or title of the position.

For more information on the Killam Awards and funding, including the Killam Chairs, click here.

To apply, please visit: https://apps.ualberta.ca/careers/posting/1423

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Contact Information

Please reference Academickeys in your cover letter when applying for or inquiring about this job announcement.

Contact

Electrical and Computer Engineering
University of Alberta
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