

Postdoctoral Fellowship in Sustainable, Resilient &
Energy-Efficient Smart Cities
University of Alberta

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| Job Title | Postdoctoral Fellowship in Sustainable, Resilient & Energy-Efficient Smart Cities |
| Department | Faculty of Engineering - Civil and Environmental Engineering Dept |
| Institution | University of Alberta Edmonton, Alberta |
| Date Posted | Dec. 5, 2024 |
| Application Deadline | Dec. 23, 2024 |
| Position Start Date | Available Immediately |
| Job Categories | Post-Doc |
| Academic Field(s) | Structural Engineering Robotics Engineering Mechanics Computer Engineering Computer Science Construction Engineering/Management Civil Engineering Engineering - Other |
| Job Website | https://apps.ualberta.ca/careers/posting/1797 |
| Apply Online Here | https://apps.ualberta.ca/careers/posting/apply/1797 |
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| Job Description | |

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Position Summary

Dr. Mustafa Gül, from the Department of Civil and Environmental Engineering, and Dr. Martin Ferguson-Pell, from the Rehabilitation Robotics Lab at the Faculty of Rehabilitation Medicine, invite applications for a postdoctoral fellow position in collaboration with the U of A 5G Living Lab.

This position is available immediately and will involve working on projects in Artificial Intelligence (AI) and deep learning with applications in two key areas:

1. AI-Powered Machine Vision for Accessibility Assessment: Developing automated frameworks to identify accessibility barriers in public spaces using visual data.
2. Reinforcement Learning for Energy-Efficient Buildings: Leveraging IoT-enabled technologies to optimize energy performance in buildings with solar panels through data-driven techniques.

The ideal candidate will demonstrate expertise relevant to both projects and articulate how their background and skills align with the position's requirements.

The initial term of the position is for one year, with the potential for renewal based on performance and funding availability.

Duties

- Conduct cutting-edge research in AI-powered machine vision for identifying accessibility barriers in public spaces and reinforcement learning for optimizing energy-efficient buildings.
- Develop and implement advanced machine learning and deep learning models, leveraging large datasets and IoT-enabled technologies.
- Collaborate with multidisciplinary teams, including researchers and industry partners, to ensure the successful execution of project goals.
- Mentor graduate and undergraduate students, fostering skill development in research and technical areas.
- Prepare high-quality research publications and presentations to share findings with the academic and professional communities.

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- Contribute to grant proposal writing and funding applications to support ongoing research initiatives.

Qualifications

(1) Educational Background:

- A Ph.D. in Civil Engineering, Computer Science, Electrical Engineering, Robotics, or other related fields.

(2) Technical Skills:

- Strong understanding of machine learning, deep learning, or reinforcement learning concepts, with demonstrated experience in applying one or more of these techniques to advanced research problems. (Candidates should be able to provide evidence of their direct involvement in such projects.)
- Strong programming skills with proficiency in Python and its relevant libraries for machine learning (e.g., scikit-learn), deep learning (e.g., TensorFlow, PyTorch), data manipulation (e.g., NumPy, Pandas), and visualization. Familiarity with SQL and relational databases is an asset.
- Strong data analytics and management skills with a demonstrable ability to clean, process, validate, and analyze large diverse datasets from various sources to identify patterns, trends, and insights.
- Experience with large-scale scientific computations using high-performance computing environments, including clusters, parallel computing techniques, and GPU-accelerated hardware, with the ability to manage complex workflows efficiently.
- Strong publication and presentation track record in related fields.
- For Project (1) familiarity with computer vision hardware and sensing devices is considered an asset.
- For Project (2) experience with energy simulation software (e.g., EnergyPlus) and PV simulation/design tools is considered an asset.

(3) Leadership and Organizational Skills:

- Experience and interest in mentoring and training students as part of a cross-disciplinary research team.

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- Ability to work both independently and collaboratively, demonstrating leadership qualities, effective collaboration with partners, and the capacity to manage multiple projects simultaneously.
- Excellent verbal and written communication skills, with the ability to present to a wide range of audiences.
- Experience in proposal development and grant writing.

At the University of Alberta, we are committed to creating an inclusive and accessible hiring process for all candidates. If you require accommodations to participate in the interview process, please let us know at the time of booking your interview and we will make every effort to accommodate your needs.

We thank all applicants for their interest; however, only those individuals selected for an interview will be contacted.

Please visit the job posting on the University of Alberta Careers page:
<https://apps.ualberta.ca/careers/posting/1797>

EEO/AA Policy

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, Métis 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.

Contact Information

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

Contact

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