
Postdoctorate call

Intelligent e-cargo bike-oriented deliveries

In partnership with DISTRIBUTION BIKE CITY INC., Professor Blondin is recruiting a postdoctorate to pursue research in the optimization of cargos deliveries.

We invite applications for a postdoctoral position at Université de Sherbrooke, located in Sherbrooke, Canada. The selected candidate will be supervised by Professor Blondin and Professor Fitzer Jr. and will work closely with employees of DISTRIBUTION BIKE CITY INC. The postdoc is expected to enroll in the *DESS de 3e cycle de perfectionnement en recherche* at Université de Sherbrooke. Tuition fees and stipend will be covered for the two years of the postdoctoral position.

- Starting date: Fall 2023;
- Funding: 40,000\$/year for two years.

The project involves a Post-doctorate Research Fellow and a Ph.D. student. The Post-doctorate Research Fellow is expected to be proactive in the project. The candidate may be presented to additional opportunities related to the post-doctorate position.

Summary of the project:

From a perspective of reducing greenhouse gases, Distribution Bike City Inc. is currently designing a hybrid bike for parcel deliveries. In urban areas, it is common to consider cargo bikes (CB) for last-mile delivery, i.e., the distribution of parcels within a small radius around a delivery point, such as a small storage facility. Numerous factors affect the CB's delivery time. An algorithm considering factors such as the mass of the cargo, battery state-of-charge, and the elevation of the road will be a practical tool for successfully incorporating an urban bike-delivery system.

The Post-doctorate Research Fellow is expected to supervise the development of an algorithm that provides an optimized delivery schedule. The Post-doctorate main tasks are developing an estimation algorithm for short delivery time interval for customers and devising methods to generate property graphs, which involves processing big real-time data from maps that the optimization algorithm will use.

Required profile:

- Ph.D. in applied mathematics, operational research, computer science, data science, or in any other relevant field with math and optimization background;
- Strong expertise in evolutionary computation, multiobjective optimization, computational intelligence, routing problems, combinatorial optimization;
- Solid experience in programming – Open Street Maps and understand Python, Julia, or C++, Matlab;
- English required; French is a plus.

Application process:

If interested in this position, please send your CV, a short motivation letter, and contact details of three referees to Professor Blondin at Maude.Blondin2@usherbrooke.ca and put the following email subject line: *Interested postdoc* – DISTRIBUTION BIKE CITY INC. Moreover, samples of your three most relevant publications will be appreciated.

Ph.D. position call

Intelligent e-cargo bike-oriented deliveries

In partnership with DISTRIBUTION BIKE CITY INC., Professor Blondin is recruiting a Ph.D. student to pursue research in the optimization of cargos deliveries.

We invite applications for a Ph.D. student position at Université de Sherbrooke, located in Sherbrooke, Canada. The selected candidate will be supervised by Professor Blondin and Professor Fitzer Jr. and will work closely with employees of DISTRIBUTION BIKE CITY INC.

- Starting date: Fall 2023;
- Funding: 20,000\$/year for three years.

The project involves a Post-doctorate Research Fellow and a Ph.D. student.

Summary of the project:

From a perspective of reducing greenhouse gases, Distribution Bike City Inc. is currently designing a hybrid bike for parcel deliveries. In urban areas, it is common to consider cargo bikes (CB) for last-mile delivery, i.e., the distribution of parcels within a small radius around a delivery point, such as a small storage facility. Numerous factors affect the CB's delivery time. An algorithm considering factors such as the mass of the cargo, battery state-of-charge, and the elevation of the road will be a practical tool for successfully incorporating an urban bike-delivery system.

The Ph.D. student is expected to develop an algorithm that provides an optimized delivery schedule of packages.

Required profile:

- Ph.D. in applied mathematics, operational research, computer science, data science, or in any other relevant field with math and optimization background;
- Strong expertise in evolutionary computation, multiobjective optimization, computational intelligence, routing problems, combinatorial optimization;
- Solid experience in programming – Open Street Maps and understand Python, Julia, or C++, Matlab;
- English required; French is a plus.

Application process:

If interested in this position, please send your CV, a short motivation letter, and contact details of three referees to Professor Blondin at Maude.Blondin2@usherbrooke.ca and put the following email subject line: *Interested postdoc* – DISTRIBUTION BIKE CITY INC. Moreover, samples of your three most relevant publications will be appreciated.



I am committed to promoting equity, diversity, and inclusion. I encourage and welcome all people with the required profile to apply, including, but not limited to, women, visible minorities, and people with disabilities.