



**Job Title:** Robotic Coop (4-month co-op)

**Job Location:** Ajax, ON

**Job Field:** Engineering

**Employment Type:** Co-op

Besnovo (formerly BRIC Engineered Systems) is a leading system integrator in industrial robotics and automation and has a track record of developing sophisticated robotic solutions and systems for the aerospace, automotive, and advanced manufacturing industries. Besnovo's robotic and automation products have been successfully deployed for worldwide customers, include the US Air Force and leading aerospace companies. The successful candidate will report to the CTO at Besnovo and will support the robotic team with various tasks.

**Responsibilities:**

- Develop a marker-based vision SLAM system for indoor localization
- Model and fuse multiple sources of information into the SLAM framework
- Design and develop algorithms to comply with strict accuracy, efficiency and computational requirements
- Actively test, evaluate and refine the SLAM system and its constituent components
- Stay up to date on the current state-of-the-art in indoor localization
- Write extensive documentation of the SLAM system

**Qualifications:**

- Student must be working towards or have recently obtained an Engineering degree in a relatable field.
- Excellent knowledge of algorithms and data structures
- Understanding of object-oriented programming, multi-threaded programming, and source-control such as Git
- Demonstrable experience programming in C++, preferably C++ and/or later versions
- Experience programming in MATLAB and/or python
- Command over principals of linear algebra
- Strong knowledge of non-linear optimization
- Understanding of probabilistic inference and Kalman filters
- Knowledge of graph theory and its application to sparse matrix computations
- Strong grasp of multi-view geometry and structure from motion
- Excellent understanding of the SLAM problem and its various solutions
- Experience working with: computer vision libraries (OpenCV), non-linear optimization and graph-based optimization frameworks (ceres-solver, g2o), and linear algebra libraries (Eigen, Armadillo, BLAS, LAPACK) is a plus
- Excellent problem solving and troubleshooting capabilities
- Ability to prioritize, multi-task, problem solve and adapt to change
- Self-starter working in an entrepreneurial environment
- Excellent knowledge of Microsoft Office

**How to apply:**

Qualified applicants should send a cover letter, resume and transcript to: [humanresources@besnovo.com](mailto:humanresources@besnovo.com) .

*Thank you for your application. Only candidates selected for interview will be contacted. Besnovo Inc. is committed to accessible employment practices which are compliant under AODA and support equal opportunity. If you require any accommodation throughout the recruitment process, please advise Human Resources at [humanresources@besnovo.com](mailto:humanresources@besnovo.com). All personal information is collected under the authority of FIPPA.*

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**Besnovo Inc.**

(formerly BRIC Engineered Systems Inc.)

Tel: +1-905-239-9888 Fax: +1-905-239-9880

[www.besnovo.com](http://www.besnovo.com)