



300-136 Market Ave.  
Winnipeg, MB R3B 0P4

## Finite Element Expert at CEMWorks Inc.

We seek a Finite Element Expert who will be responsible for scalable, accurate, and fast implementation of FEM & adaptive mesh refinement for simulation of electromagnetic phenomenon.

At CEMWorks, we strive to enable accurate electromagnetic simulations for the upcoming smart cities, autonomous self-driving cars, 5G networks, and new generations of computer chip interconnects. This ambitious goal requires us to build a team of the most talented professionals who enjoy the opportunity to work in the challenging and very rewarding environment of large-scale numerical simulations.

Writing code to test novel and well-established concepts for fast and accurate solution of electromagnetics challenges will constitute the major part of the job. The new team member is also expected to participate in code testing/verification/validation, fixing software errors and present the work results in a form of research reports, presentations, and conference papers.

### Responsibilities

- Contributes as a team member on development of the software and algorithms for computational electromagnetics
- Design algorithms and test their implementation on practical examples
- Write well-designed, testable computer code
- Prepare software documentation according to company's standards
- Improve general code performance and adapt it to high-performance computing software & hardware architectures
- Deploy software, perform and analyze numerical simulations

### Required Qualifications

- M.Sc. degree in quantitative research field (engineering, computational physics, mathematics, computer science, etc.)
- Practical FEM implementation experience in one of high-level programming languages
- Familiarity with adaptive mesh refinement for FEM
- Strong math background
- Some exposure to Linux/Unix
- Desire to work on cutting-edge techniques for physics applied to real-world projects

### Preferred Qualifications

- Ph.D. degree in quantitative research field
- Fluency in C++ with application to parallel high-performance computing
- Experience with CAD software
- Experience with common algorithms of computational electromagnetics
- Familiarity with 3-D modeling and mesh algorithms

Apply by email at [jobs@cemworks.com](mailto:jobs@cemworks.com)