ALIREZA MIRZAEI

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Highlights of Qualification

- Professional Engineer (P.Eng) registered in the Province of Ontario, Canada
- PhD (Structural), Civil Eng., McGill University, 2014
- Design of Steel, Concrete, Composite, and Special Structures:
  7 years of experience in design and structural assessment of buildings, stadia terraces, bridge decks, maritime structures, protection structures, deep sea pipelines, construction decks, mining truck bodies, equipment support structures, oil transporting steel barge bodies, floors sensitive to human induced vibrations, plenums, and other special structures in accordance with the Canadian, American, Eurocode and other design codes
- Finite Element Analysis and Multiphysics Simulations:
  13 years of experience in linear and nonlinear static, dynamic, modal, thermal, blast, and impact analysis by using the following software packages:
  - SIMULIA **ABAQUS** (9 years of experience)
  - CSI **SAP2000**, **ETABS** and **SAFE** (13 years of experience)
  - **ANSYS** and **LS-DYNA** (3 years of experience)
  - **STAAD PRO** and **RISA 3D** (1 year of experience)
- Cad Drafting and 3D Modeling Skills:
  Experience in CAD Drafting and 3D Modeling. Capable of developing parametric and non-parametric geometry models used for finite element modeling or graphical presentations. Experience with a variety of 3D software such as:
  - **AUTOCAD** (16 years of experience)
  - **SOLIDWORKS** (3 years of experience)
  - **SPACECLAIM** (2 years of experience)
  - **LIGHTWAVE** (1 year of experience)
  - **MAYA** (1 year of experience)
  - **INVENTOR** (1 year of experience)
- Industrial Research and Development including Laboratory Testing:
  9 years of industrial R&D experience. Experience in design and performing experimental work (setup design, fabrication, testing, instrumentation, data processing, reporting)
- Over 3 years of experience in teaching structural engineering principals (Awarded outstanding TA 2013)
- Architectural-structural knowledge for satisfying architectural needs in design and experience in interior design
- Knowledge of computer hardware and software. Able to assemble, install and repair computer systems

Education

- **PhD in Structural Engineering** — 2009 - 2014
  McGill University — *Montreal, Canada*
  PhD thesis: Steel Shear tab Connections Subjected to Combined Shear and Axial Forces

- **M.Sc. in Structural Engineering** — 2007 – 2009
  University of Sheffield — Sheffield, UK
  Msc dissertation: *Seismic Behavior of Steel Structures Subjected to Seismic Loading*

- **Bachelor Degree of Civil Engineering** — 2000 – 2005
  University of Kerman — Kerman, Iran

Professional Experience

- **Structural Engineer** Nov 2014 – March 2019
  Intelligent Engineering (Canada) Ltd Ottawa, Canada

  Conducted advanced finite element analyses on, and developed alternative designs of, flooring systems, bridges, stadia terraces, ship structures, ship components and any other engineered structures related to advancing composite structural laminate construction. Dynamic response modeling, vibration assessment and design of SPS floors due to human induced vibrations. Development of the SPS Design Guideline of Floors and the SPS Design Guideline of Stadia Terraces including preparation of design tools. Material take out off and sale support.

- **Research Scientist** May 2014 – Nov 2014
  McGill University and John Hopkins University Montreal, Canada

  Involvement in a research program to develop an AISI standards approved method for designing narrow strap-braced shear walls with supporting design examples. The project was funded by the AISI Standards council. The design/analysis method has been included in the new AISI S400 standard on seismic design of CFS.

- **Research Assistant** 2009 – 2014
  McGill University Montreal, Canada

  Involvement in a research program that was aimed towards improving the current design and detailing provisions in Canada used for structural steel shear tab connections. The research project was financially supported by the Natural Sciences and Engineering Research Council of Canada (*NSERC*) through a R&D grant with industrial partners *ADF Group Inc*. and *DPHV Structural consultants* both located in Montreal, Canada. A design approach to include the effects of axial force in the design of shear tab connections was introduced.

- **Teaching Experience**
  McGill University Montreal, Canada

  Instructor for CIVE 607 "***Advanced Design in Steel***" graduate course Fall 2018
  Three years of experience in teaching assistantship of the following courses: 2011 – 2014
  - CIVE 318: ***Structural Engineering 2*** (Design of wood, concrete and steel structures)
  - CIVE 462: ***Design of Steel Structures*** (Design of structural steel elements)
  - CIVE 207: ***Solid Mechanics***
  - CIVE 388: ***Concrete and Foundation Design***

- **Civil Engineer and Construction Manager** 2004 – 2007
  Arianpad Construction Company Kerman, Iran

  Three years of work experience in a design office and on field. Accomplishments:
  - Complete design of 12 steel frame building projects by using CSI ETABS, SAP2000 and SAFE
  - Design of different types of foundations such as mat, one or two way striped and single footing foundations for the designed structures
  - Design of two large scale commercial sign structures and one water tank storage support
  - Drafting over 800 2D and 3D structural details with AUTOCAD and material estimation
  - Construction management of 5 residential and commercial projects
  - Experience in reinforcing and renovation of two old commercial buildings

Awards and Honors

- McGill Faculty of Engineering "Outstanding Teaching Assistant Award 2013 "
- AISI standards Council Project Fellowship (2014)
- Fully funded PhD opportunity at McGill university, financially supported by NSERC through a R&D grant with industrial partners ADF Group Inc. and DPHV Structural consultants both located in Montreal, Canada (2009-2014)
- Ranked 1st among M.Sc. graduate students of the University of Sheffield (2007)
- Best Presentation award in the Civil Engineering Graduate Student Society 17th conference (2009)