(Reza Alavi)

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Education

University of New Brunswick (UNB), Fredericton, NB, Canada, May 2013 – December 2015
- Master of Mechanical Engineering

University of New Brunswick (UNB), Fredericton, NB, Canada, September 2011 - May 2013
- Bachelor of Science in Mechanical Engineering, Solid Mechanics
- **B.Sc. Senior Design Project:** Designing of a deep-well drilling apparatus

University of Tabriz, Tabriz, Iran, September 2006 - September 2011
- Bachelor of Science in Mechanical Engineering, Solid Mechanics
- Completed 131 credit hours (out of 141) in Mechanical Engineering B.Sc. program[*]

[*] In 2011, I decided to transfer to University of New Brunswick to seek better opportunities.

PUBLICATIONS & POSTER PRESENTATION

- **Reza Alavi**, Edmund Biden (2015), Potential RSI Risks In One Handed Texting, The Association of Children's Prosthetic-Orthotic Clinic Poster Presentation Conference, Abstract Accepted, USA (Colorado, April 2016)

- K. Hu, Z.T. Chen, and **R. Alavi** (2014), Finite element study of the metal cutting with damage effects, 5th International conference on Mechanical Engineering and Mechanics, 2014, China (Yangzhou, August 2014)

- **Seyed.M.R. Rafieipour Alavi**, A. Abedini, and Z.T. Chen (2013), Numerical simulation of the influence of particle clustering on tensile behavior of particle reinforced composites: Study of shape of the particles, 13th International Conference of Fracture, 2013, China (Beijing, June 2013)

ACADEMIC WORK EXPERIENCES

Summer Graduate Student, Prof. Chris McGibbon, UNB **Institute of Biomedical Engineering**, May 2015-Augost 2015

Project:
Instrumentation of a mobility aid device

- Developing a 3D geometrical model of the knee joint from **MRI data** using *Mimics* and *Itk- Snap*

- Conducting smaller sub-projects as needed, i.e. designing a CAD model and communicating with suppliers for our group to order a needed material
- Preparing reports

Graduate Academic Assistant (GAA), Prof. Zengtao Chen, Applied Mechanics and Manufacturing Laboratory, UNB, May 2013 – December 2014

Research Assistant (RA), Prof. Zengtao Chen, Applied Mechanics and Manufacturing Laboratory, UNB, May 2012 - August 2012

Project: Investigation of the effect of particle-clustering on particle reinforced composites

- Investigating the effects of clusters of ellipsoidal particles for a wide range of volume fraction and geometries on the mechanical behavior of aluminium-ceramic composites
- Using the finite element software, *Abaqus*, to predict the mechanical behavior, and employing
  Matlab for the post-processing.

Project: Evaluation of the loading capacity of a bi-axial tensile testing device in the Applied Mechanics and Manufacturing Laboratory at UNB

- Finite element simulation using *Abaqus*, post-processing of the numerical results by *Matlab*, and CAD design by *NX Unigraphics*.

Graduate Teaching Assistant (GTA), Mechanical Engineering Department, UNB

- **Manufacturing Engineering I (ME 2222):** Running the lab and instructing students in conducting experiments, Fall 2014 and Fall 2013.
- **Design Optimization (ME 2352):** Marking lab assignments and quizzes, Winter 2014

Undergraduate Teaching Assistant, Mechanical Engineering Department, UNB

- **Design Optimization (ME 2352):** Marking lab assignments and quizzes, Winter 2013
- **Manufacturing Engineering I (ME 2222):** Marking assignments, Fall 2012

ACADEMIC PROJECTS & REPORTS

Master of Engineering Project, Mechanical Engineering Department, Prof. Edmund Biden,

UNB, January 2015-September 2015

Evaluating the applied forces on a cellphone screen during text messaging

- Developing a design for how to use the technology, required signal processing and data acquisition

- Running the texting experiments on multiple human subjects

- Analyzing the text messaging contact forces using the experimental data

Graduate Course Project, Mechanical Engineering Department, UNB, January 2015 _ April 2015

Application and Fabrication Methods of Hydroxyapatite Nano-Particles: A Literature Review

- Conducting a literature review and delivering the project report

Graduate Course Project, Mechanical Engineering Department, UNB, November 2014

Development of a Finite Element Code Using Matlab

- Generating the code to solve a solid mechanic problem in which a beam was under a distributed load

Graduate Course Project, Mechanical Engineering Department, UNB, July 2014

Investigation of the Machining-Induced Residual Stresses in a Workpiece: A Literature Review

- Conducting a literature review and delivering the project report

Graduate Course Project, Mechanical Engineering Department, UNB, January 2014 - April 2014

Crack Plastic Behavior: A Literature Review

- Collaborating in a team of two graduate students to conduct a literature review and to write the project report

Master Project, Mechanical Engineering Department, UNB, May 2013 - January 2014

Numerical Simulation of Metal Cutting and Milling with Damage effects

- Developing 2D orthogonal cutting and milling models using Abaqus/Explicit
- Presenting the models and the results for an industrial partner (Apex Industries Inc.)

B.Sc. Senior Design Project, Mechanical Engineering Department, UNB, September 2012 - April 2013

Design of a Small Scale Test Rig that Replicates the Drilling Process of a Deep Well

- Collaborating in a team of three undergraduate students to develop the design and to prepare the progress reports
- CAD designing of the device components using NX-Unigraphics CAD software

Fourth Year B.Sc. Project, Mechanical Engineering Department, UNB, Fredericton, Canada, September 2012 - December 2012

Micro-Wind Turbine Design

- Collaborating in a team of three undergraduate students to design a micro-wind turbine for arctic application and preparing progress reports

Third Year B.Sc., Mechanical Engineering Department, UNB, Project, Fredericton, Canada, January 2012 - April 2012

Axial Flow Pump Design
- Collaborating in a team of four undergraduate students to prepare a design proposal
- Cooperating in design of the blade profile

GRADUATE COURSES TAKEN

- Biomaterials
- Basis of Biomedical Engineering
- Micro/ Nano Manufacturing
- Fracture Mechanics
- Continuum Mechanics

COMPUTER SKILLS

CAD/CAE Softwares	Finite Element/ Image Processing Softwares	General Softwares
NX Unigraphics	*ABAQUS*	*MATLAB*
SolidWorks	*ANSYS*	*Minitab*
CATIA	*Mimics Innovation Suite*	*Maple*
Solid Edge 2D	*ITK Snap*	*Microsoft Word/Excel*
AutoCAD		*PowerPoint*

NON-ACADEMIC WORK & VOLUNTEER EXPERIENCES

Mathematics Tutor, Self- employed, Present
- Tutoring Math in various levels in one-on-one or group classes

Social Convener, Volunteer, UNB Persia, September 2012-September 2013
- Assisted the president in making arrangements for various events and coordinating the organization of the events held by the Persian Student Association at UNB

Marketing & Promotions Committee Representative, Volunteer, Student Union, UNB, August 2012-September 2012
- Promoted and advertised the TEDxUNB event by contacting members of the media

Administrative Assistant, Annual Giving Development and Donor Relation Office, UNB, October 2011-May 2012
- Reviewed and organized data alphabetically to insure the accuracy, and sealed envelopes

- Worked with minimal supervision

Personal Assistant, Volunteer, Private Employer, Fredericton, Canada, Summer 2011
- Sorted and organised instruments and machinery so they could be easily located
- Assisted with multiple projects as needed; met with the owner to determine daily tasks

CERTIFICATES

- **Workplace Standard First Aid/ Level C CPR/AED** , 2014

LANGUAGES

- Fluent in English and Persian (Spoken and Written)
- Elementary skills in Azerbaijani and Arabic

ABILITIES & HOBBIES

- Teaching
- Working independently with a high level of responsibility in varied tasks
- Having the proven adaptability to new environments
- Being able to interact in groups and one-on-one to accomplish assignments
- Skillfully expressing and interpreting knowledge and ideas
- Cultures, Reading, Hiking, Mountain Climbing, Swimming, Weight Training, Camping