










# Ebrahim Ghaderpour

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-  [publons.com/researcher/3184787/ebrahim-ghaderpour](https://publons.com/researcher/3184787/ebrahim-ghaderpour)
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## EDUCATION

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- Doctor of Philosophy | Earth and Space Science | GPA: 4/4** 2013 – 2018  
**York University** Toronto, ON  
Thesis Title: **Exceptional Dissertation**  
Least-Squares Wavelet Analysis and Its Applications in Geodesy and Geophysics  
Supervisor: Spiros D. Pagiatakis
- Doctor of Philosophy | Theoretical and Computational Science | GPA: 4/4** 2010 – 2013  
**University of Lethbridge** Lethbridge, AB  
Thesis Title: Asymptotic Existence of Orthogonal Designs  
Supervisor: Hadi Kharaghani
- Master of Science | Pure Mathematics (Analysis) | GPA: 89%** 2007 – 2010  
**Isfahan University of Technology** Isfahan, Iran  
Thesis Title: Polynomial Numerical Hull for Operators on Hilbert Spaces  
Supervisors: Seyed Mahmoud Manjegani and Farid Bahrami
- Bachelor of Science | Applied Mathematics | GPA: 87%** 2003 – 2007  
**University of Isfahan** Isfahan, Iran

## WORK EXPERIENCE

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- Sessional Instructor** 2016–present  
Department of Mathematics and Statistics, University of Calgary  
Calgary, AB
- Research Associate** 2019–2020  
Department of Geomatics Engineering, University of Calgary  
Calgary, AB
- Postdoctoral Scholar** 2016–2018  
Department of Mathematics and Statistics, University of Calgary  
Calgary, AB
- Remote Sensing Scientist** 2016–2019  
Farmers Edge Inc.  
Lethbridge, AB
- Research and Teaching Assistant** 2013–2016  
Department of Earth and Space Science, York University  
Toronto, ON
- Research and Teaching Assistant** 2010–2013  
Department of Mathematics and Computer Science, University of Lethbridge  
Lethbridge, AB

# PUBLICATIONS

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1. **Ghaderpour, E., 2021.** JUST: MATLAB and Python software for change detection and time series analysis, **GPS Solutions**, To Appear
2. **Ghaderpour, E.,** and Vujadinovic, T., **2020.** Change detection within remotely-sensed satellite image time series via spectral analysis. **Remote Sensing**, 12(23): 4001.
3. **Ghaderpour, E.,** and Vujadinovic, T., **2020.** The potential of the least-squares spectral and cross-wavelet analyses for near-real-time disturbance detection within unequally spaced satellite image time series. **Remote Sensing**, 12(15): 2446.
4. **Ghaderpour, E., 2020.** Least-squares wavelet and cross-wavelet analyses of VLBI baseline length and temperature time series: Fortaleza-Hartrao-Westford-Wettzell. **Publications of the Astronomical Society of the Pacific**. 133(1019), pp. 10.
5. **Ghaderpour, E.,** and Ghaderpour, S., **2020.** Least-squares spectral and wavelet analyses of V455 Andromedae time series: The life after the super-outburst. **Publications of the Astronomical Society of the Pacific**. 132(1017), pp. 11.
6. **Ghaderpour, E.,** Ben Abbes, A., Rhif, M., Pagiatakis, S. D., and Farah, I. R., **2020.** Non-stationary and unequally spaced NDVI time series analyses by the LSWAVE software. **International Journal of Remote Sensing**. 41(6), 2374-2390.
7. **Ghaderpour, E.,** Pagiatakis, S. D., **2019.** LSWAVE: a MATLAB software for the least-squares wavelet and cross-wavelet analyses. **GPS Solutions**, 23:50.
8. **Ghaderpour, E., 2019.** Multichannel antileakage least-squares spectral analysis for seismic data regularization beyond aliasing. **Acta Geophysica**. 67(5), 1349-1363.
9. **Ghaderpour, E., 2018.** Constructions for orthogonal designs using signed group orthogonal designs. **Discrete Mathematics**. 341(1), 277-285.
10. **Ghaderpour, E.,** Liao, W., Lamoureux, M. P., **2018.** Antileakage least-squares spectral analysis for seismic data regularization and random noise attenuation. **Geophysics**, 8(3), V157-V170.
11. **Ghaderpour, E.,** Ince, E. S., and Pagiatakis, S. D., **2018.** Least-squares cross-wavelet analysis and its applications in geophysical time series. **Journal of Geodesy**, 92(10), 1223-1236.
12. **Ghaderpour, E.,** Pagiatakis, S. D., **2017.** Least-squares wavelet analysis of unequally spaced and non-stationary time series and its applications. **Mathematical Geosciences**, 49(7), 819-844.
13. **Ghaderpour, E., 2016.** Some equal-area, conformal and conventional map projections: a tutorial review. **Journal of Applied Geodesy**. 10(3), 197-209.
14. **Ghaderpour, E., 2016.** Some non-existence and asymptotic existence results for weighing matrices. **International Journal of Combinatorics**. pp. 6.
15. **Ghaderpour, E., 2015.** Signed group orthogonal designs and their applications. **Book Chapter** in Algebraic Design Theory and Hadamard Matrices. *Springer Proceedings in Math and Stat*. 133, 107-123.
16. **Ghaderpour, E., 2015.** Some constructions for amicable orthogonal designs. **Australasian Journal of Combinatorics**. 63(3), 374-384.
17. **Ghaderpour, E.,** and Kharaghani, H., **2014.** The asymptotic existence of orthogonal designs. **Australasian Journal of Combinatorics**. 58(2), 333-346.

18. **Ghaderpour, E.**, and Morris, D. W., **2014**. Cayley graphs on nilpotent groups with cyclic commutator subgroup are Hamiltonian. **Ars Mathematica Contemporanea**. 7(1), 55-72.
19. **Ghaderpour, E.**, and Morris, D. W., **2012**. Cayley graphs of order 30p are Hamiltonian. **Discrete Mathematics**. 312(24), 3614-3625.
20. **Ghaderpour, E.**, and Morris, D. W., **2011**. Cayley graphs of order 27p are Hamiltonian. **International Journal of Combinatorics**. pp. 16.

## IN REVISIONS

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1. **Ghaderpour, E.**, and Vujadinovic, T., **2021**. Application of the Least-Squares Wavelet Software in Hydrology: Athabasca River Basin, **Journal of Hydrology: Regional Studies**.

## PATENTS

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1. **Ghaderpour, E.**, Jensen M., Duke G., McCaffrey D.R., **2019**. Refined Average for Zoning Method and System, US Patent App. 16/847, 184.

## HONORS AND AWARDS

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York University Distinguished Scholar Prize	2019
Nominated for the Governor General's Gold Medal	2019
Postdoctoral Scholarship from Pacific Institute for the Mathematical Sciences (PIMS)	2016–2018
Best Paper Award in Geodesy from the Canadian Geophysical Union	2015
Best Presentation Award from York University	2015
York Graduate Scholarships and Awards from York University	2013–2015
Top Student at York University	2013–2015
Advantage and Admission Awards from the University of Lethbridge	2010–2013
Top Student at the University of Lethbridge	2010–2012
On the Dean's Honor List Every Semester	2003–2010

## CERTIFICATES

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<b>Teaching Certificate</b>	2016
Taylor Institute for Teaching and Learning	University of Calgary
<ul style="list-style-type: none"> <li>• Learned how to enhance the quality of teaching to university students and practiced presentations and group facilitation skills (28 hours)</li> </ul>	

## SKILLS

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**Languages:** English, Farsi (Native), Arabic, French (Beginner)  
**Programming:** Python, MATLAB, C++, Maple, GIS, WeBWork  
**Document Creation:** Latex, Microsoft Office Suite (Excel, Word, PowerPoint)

## SOFTWARE DEVELOPMENT

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🔗 <b>JUST</b> : Jumps Upon Spectrum and Trend in Python and MATLAB National Oceanic and Atmospheric Administration (NOAA)	2021 Washington, DC, US
🔗 <b>LSWAVE</b> : Least-Squares WAVElet in MATLAB National Oceanic and Atmospheric Administration (NOAA)	2019 Washington, DC, US
🔗 Climate Index Calculator in Python and MATLAB Alberta Environment and Park	2020 Calgary, AB, Canada
🔗 Management Zone Builder in Python Farmers Edge Inc.	2019 Winnipeg, MB, Canada
🔗 Cloud and Shadow Detector in Python Farmers Edge Inc.	2017 Winnipeg, MB, Canada
🔗 Fertilizer Calculator in Python Farmers Edge Inc.	2016 Winnipeg, MB, Canada
Multi-Navigation Satellite System Constellation Simulator in MATLAB York University	2015 Toronto, ON, Canada
Orthogonal Design Generator in C++ and Maple University of Lethbridge	2013 Lethbridge, AB, Canada
Polynomial Factorizer Over Real Numbers in Python University of Lethbridge	2012 Lethbridge, AB, Canada

## RESEARCH EXPERIENCE

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### RESEARCH ASSOCIATE: UNIVERSITY OF CALGARY AND GOVERNMENT OF ALBERTA

- Applied my time series analysis techniques to rigorously analyze the Very Long Baseline Interferometry (VLBI) baseline length series for four stations located in four different continents
- Proposed a robust change detection algorithm to detect changes caused by drought, fire, insect attack, flood, urbanization, and harvesting within remotely-sensed satellite image time series
- Proposed a robust algorithm for near-real-time disturbance detection in satellite image time series
- Proposed robust spectral analysis methods for analyzing light curves of cataclysmic variable stars
- Proposed a Bayesian algorithm to find a small set of Global Climate Models (GCMs) whose performances are the best among others for the province of Alberta
- Developed a Python package that computes the 27 climate indices via historical and future GCMs
- Proposed machine learning techniques to investigate the relationship between discharge and water level for a few hydrometric stations in Alberta
- Investigated possible relationships between weather data and water level via wavelet analysis
- Utilized several techniques to find numerical solutions of ordinary and partial differential equations, such as spectral, gradient discretization, and finite element methods

### POSTDOCTORAL SCHOLAR: UNIVERSITY OF CALGARY

- Proposed a novel method of seismic data regularization and random noise attenuation via the least-squares optimization technique

- Proposed a robust method that incorporates the spatial gradients of data series (if available) to aid regularization of seismic data beyond aliasing

#### REMOTE SENSING SCIENTIST: FARMERS EDGE INC.

- Proposed an algorithm that incorporates digital elevation models into multi-year remote sensing satellite images to delineate unsupervised management zones for farms
- Proposed two novel classification techniques, namely, area-weighted and weighted natural breaks that can classify vegetation index and crop health maps
- Proposed and developed Python code for fertilizer calculation and cloud-shadow masking
- Created an excel prototype for crop disease forecasting using a machine learning technique
- Conceptualized and developed several statistical programs in Python for management zone delineation, such as the fuzzy c-means, k-means, natural breaks, and kriging

#### DOCTORAL RESEARCH: YORK UNIVERSITY

- Proposed a robust method of analyzing unequally spaced and non-stationary time series, namely, the least-squares wavelet analysis and applied it to analyze time series from VLBI baseline length series, Gravity field and steady-state Ocean Circulation Explorer (GOCE) electrostatic gradiometer measurement disturbances, superconductive gravimeter data, and Global Positioning System (GPS)
- Proposed a vigorous method of coherency analysis of two or more unequally spaced and non-stationary time series, namely, the least-squares cross-wavelet analysis and applied it to investigate the coherency and phase differences between the VLBI length series and temperature series and to study the disturbances in the gravitational gradients observed by GOCE satellite

#### DOCTORAL RESEARCH: UNIVERSITY OF LETHBRIDGE

- Introduced signed group orthogonal designs, generalized orthogonal designs, to prove the asymptotic existence of orthogonal designs and consequently improve the asymptotic existence of Hadamard matrices
- Proposed several algorithms to construct new orthogonal designs and Hadamard matrices
- Constructed two new and infinite classes of weighing matrices and amicable orthogonal designs
- Explored the applications of orthogonal designs and Hadamard matrices in signal processing, cryptography, wireless networking, and communications

#### RESEARCH: UNIVERSITY OF LETHBRIDGE



- Conceptualized Cayley graphs and proved the Hamiltonicity of Cayley graphs of certain orders
- Explored the applications of Cayley Graphs in intelligent transportation systems, road networks, and social media

#### MASTER RESEARCH: ISFAHAN UNIVERSITY OF TECHNOLOGY

- Worked on the polynomial numerical hull for operators on Hilbert Spaces
- Examined the numerical range of matrices and its boundary and properties

# JOURNAL REVIEWER

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Verified Reviews Available at  Publons and  ORCID

Journal (Publisher)	# Reviews
Geophysics (Society of Exploration Geophysicists)	7
Applied Sciences (MDPI)	6
Discrete Mathematics Algorithms and Applications (World Scientific)	3
IEEE Transaction on Signal Processing (IEEE Signal Processing Society)	2
Canadian Journal of Remote Sensing (Taylor & Francis)	2
Sensors (MDPI)	2
ISPRS International Journal of Geo-Information (MDPI)	2
Sustainability (MDPI)	2
Remote Sensing (MDPI)	1
Journal of Algebraic Combinatorics (Springer)	1
Ars Mathematica Contemporanea (DMFA Slovenia)	1
Mathematics (MDPI)	1
Special Matrices (De Gruyter)	1
The Art of Discrete and Applied Mathematics (DMFA Slovenia)	1
IEEE Sensors Journal (IEEE Sensors Council)	1
Energies (MDPI)	1
Data (MDPI)	1

## CONFERENCES AND PRESENTATIONS<sup>1</sup>

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1. **Ghaderpour, E., March 2020.** Chapter 9: Convolutional Network, Review of “Deep Learning” book by I. Goodfellow, Y. Benjio, and A. Courville, Lunch at the Lab Mathematical Finance Seminar Series, Department of Mathematics and Statistics, University of Calgary, Canada (Institutional, oral)
2. **Ghaderpour, E., Ben Abbes, A., Rhif, M., Pagiatakis, S. D., and Farah, I. R., July 2019.** Non-stationary and unequally spaced NDVI time series analyses by the LSWAVE software, International Union of Geodesy and Geophysics, Montreal, Canada (International, oral)
3. **Ghaderpour, E., July 2019.** Time-varying Visualization with a Single Image Summary, Department of Computer Science, University of Calgary, Canada (Institutional, oral)
4. **Ghaderpour, E., February 2019.** Geoid and its applications, Department of Computer Science, University of Calgary, Canada (Institutional, oral)
5. **Ghaderpour, E., March 2018.** Multichannel antileakage least-squares spectral analysis for seismic data regularization beyond aliasing, Diversification Trends in Engineering Technology and Applied sciences (DTETA). Tokyo, Japan (International, oral)
6. Ghaderpour, E., **Ince, E. S.,** and Pagiatakis, S. D., **March 2018.** Least-squares wavelet analysis and its applications in geodetic and geophysical time series analyses, European Geosciences Union General Assembly, Vienna, Austria (International, poster)
7. **Ghaderpour, E., Liao, W., and Lamoureaux, M. P., May 2017.** Anti-leakage least-squares spectral analysis for data regularization, Geo Convention, Calgary, Canada (Regional, oral)

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<sup>1</sup>The main contributor's name comes first, and the presenter is highlighted

8. **Ghaderpour, E.**, Liao, W., and Lamoureux, M. P., **March 2017**. Antileakage least-squares spectral analysis for data regularization, Consortium for Research in Elastic Wave Exploration Seismology (CREWES), University of Calgary, Canada (Regional, oral)
9. **Ghaderpour, E.**, and Pagiatakis S. D., **October 2016**. Least-squares wavelet analysis and its applications. The 38th Annual Meeting of Alberta Statisticians, University of Alberta, Canada (Provincial, oral)
10. **Abd El-Gelil, M.**, Ghaderpour, E., and Pagiatakis S. D., **June 2016**. The potential of the least-squares wavelet analysis for estimating the time-frequency transfer function of atmospheric variations effect of superconducting gravity data, the 18th international symposium on the Geodynamics and Earth Tide, Trieste, Italy (International, oral)
11. **Ghaderpour, E.**, and Pagiatakis S. D., **June 2015**. Least-squares wavelet analysis and its applications, International Union of Geodesy and Geophysics. Prague, Czech Republic (International, poster)
12. **Ghaderpour, E.**, and Pagiatakis S. D., **May 2015**. Least-squares wavelet analysis and stochastic surfaces in the least-squares wavelet analysis, Canadian Geophysical Union, Montreal, Canada (National, oral)
13. **Ghaderpour, E.**, Dorland, J., and Kapoko, F., **April 2015**. Multi-navigation satellite system constellation simulator, York University, Canada (Technical report)
14. **Ghaderpour, E.**, **July 2014**. Signed group orthogonal designs and their applications. Workshop on Algebraic Design Theory and Hadamard Matrices, University of Lethbridge, Canada (Institutional, oral)
15. **Ghaderpour, E.**, **2013**. The asymptotic existence of orthogonal design. Number Theory and Combinatorics, University of Lethbridge, Canada (Institutional, oral)
16. **Ghaderpour, E.**, **2012**. Bounds for systems of lines, University of Lethbridge, Canada (Institutional, oral)

## TEACHING EXPERIENCE

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### SESSIONAL APPOINTMENTS

#### **Mathematical Methods (MATH 415)**

Department of Mathematics and Statistics

Winter 2021  
University of Calgary

- LEC 1. Prepared lectures, videos, Top Hat assignments, lab questions, and final exam for a class of 60 students
- For the second half of the course: Signal Processing

#### **Linear Methods I (MATH 211)**

Department of Mathematics and Statistics

Winter 2021  
University of Calgary

- LEC 4. Supervised five teaching assistants and distributed tasks among them, monitored the student activities in the D2L discussion board and helped the course coordinator, Claude Laflamme, for the exam preparations

#### **Calculus II (MATH 2560A)**

Department of Mathematics and Computer Science

Winter 2021  
University of Lethbridge

- LEC 1. Prepared lectures, videos, WeBWork assignments, CrowdMark weekly quizzes, and final exam for a class of 100 students

- Differential Equations for Engineers and Scientists (MATH 375)** Fall 2020  
 Department of Mathematics and Statistics University of Calgary
- LEC 3 and LEC 4. Prepared lectures, videos, and helped the course coordinator, Mohammed Aiffa, for preparing midterm and final exams
- Multivariable Calculus for Engineers and Scientists (MATH 277)** Winter 2020  
 Department of Mathematics and Statistics University of Calgary
- LEC 3. Prepared lectures and helped the course coordinator, Yousry Elsabrouty, for preparing midterm and final exams
- University Calculus III (MATH 367)** Fall 2019  
 Department of Mathematics and Statistics University of Calgary
- LEC 1. Prepared lectures, lab questions, WeBWork assignments, midterm and final exams for a class of 116 students, including grading and invigilation
- Introductory Calculus (MATH 249)** Fall 2019  
 Department of Mathematics and Statistics University of Calgary
- LEC 2. Prepared lectures for a class of 111 students and helped the course coordinator, Jerrod Smith, with exam setup, invigilating, and grading
- Differential Equations I (AMAT 311)** Fall 2017  
 Department of Mathematics and Statistics University of Calgary
- LEC 1. Prepared lectures, WeBWork assignments, midterm and final exams for a class of 115 students, including grading and invigilation
- University Calculus I (MATH 265)** Fall 2017  
 Department of Mathematics and Statistics University of Calgary
- LEC 4. Prepared lectures for a class of 113 students and helped the course coordinator, Joseph Ling, with exam setup, invigilating, and grading
  - Held tutorial lab sessions
- Multivariable Calculus for Engineers and Scientists (MATH 277)** Winter 2017  
 Department of Mathematics and Statistics University of Calgary
- LEC 4. Prepared lectures for a class of 192 students and helped the course coordinator, Yousry Elsabrouty, with exam setup, invigilating, and grading
  - Held tutorial lab sessions
- Calculus for Engineers and Scientists (MATH 275)** Fall 2016  
 Department of Mathematics and Statistics University of Calgary
- LEC 4. Prepared lectures for a class of 218 students and helped the course coordinator, Yousry Elsabrouty, with exam setup, invigilating, and grading
  - Held tutorial lab sessions
- Differential Equations** Winter 2010  
 Department of Mathematics Azad University of Najaf Abad, Isfahan, Iran
- LEC 1. Prepared lectures, midterm and final exams for a class of 90 students, including invigilating and grading
- Calculus** Winter 2010  
 Department of Mathematics Azad University of Tiran, Isfahan, Iran
- LEC 1. Prepared lectures, midterm and final exams for a class of 50 students, including invigilating and grading



## GUEST LECTURES

### **Computational Finance (MATH 683)**

Department of Mathematics and Statistics

- Prepared and taught one lecture on behalf of Tony Ware

Winter 2017  
University of Calgary

### **Scientific Computation (MATH 661)**

Department of Mathematics and Statistics

- Prepared and taught one lecture on behalf of Wenyan Liao

Fall 2016  
University of Calgary

### **Analysis of Overdetermined Systems (LE/ESSE 3630)**

Department of Earth and Space Science and Engineering

- Prepared and taught a few lectures on behalf of Spiros Pagiatakis

Winter 2015  
York University

### **Adjustment Calculus (LE/ESSE 3620)**

Department of Earth and Space Science and Engineering

- Prepared and taught a few lectures on behalf of Spiros Pagiatakis

Fall 2014  
York University

## TEACHING ASSISTANT APPOINTMENTS

### **Electricity, Magnetism, and Optics for Engineers (PHYS 1801)**

Department of Earth and Space Science and Engineering

- Set up exams and laboratory instruments
- Helped students to do experiments and marked their reports

Winter 2016  
York University

### **Earth Environment (ESSE 1012)**

Department of Earth and Space Science and Engineering

- Organized lab sessions and graded exams and assignments

Winter 2016  
York University

### **Adjustment Calculus (LE/ESSE 3620)**

Department of Earth and Space Science and Engineering

- Organized lab sessions and helped students with their assignments
- Prepared quizzes for students and graded quizzes and assignments

Fall 2014  
York University

### **Analysis of Overdetermined Systems (LE/ESSE 3630)**

Department of Earth and Space Science and Engineering

- Organized lab sessions and helped students with their assignments
- Prepared quizzes for students and graded quizzes and assignments

Winter 2015  
York University

### **Continuum Mechanics (LE/EATS 2470)**

Department of Earth and Atmospheric Science

- Helped students with their assignments and graded them
- Conducted labs for the instrumental experience

Winter 2014  
York University

### **The Dynamic Earth and Space Geodesy (SC/EATS 1010)**

Department of Earth and Atmospheric Science

- Grouped students for GPS surveying
- Tutored and guided students in their assignments and graded them

Fall 2013 & Fall 2014  
York University

### **The History of Astronomy (SC/NATS 1745)**

Department of Natural Science

- Graded online assignments and projects

Summer 2014  
York University

**Linear Algebra (Math 1410)** Fall 2012 & Winter 2013  
Department of Mathematics and Computer Science University of Lethbridge

- Graded midterm and final exams
- Helped students to understand the course better

**General Help Sessions** 2011–2013  
Department of Mathematics and Computer Science University of Lethbridge

- Helped students with several courses, such as Calculus, Statistics, Linear Algebra, Differential Equation, Algebra, and Analysis

**Analysis I (Math 3500)** Fall 2011  
Department of Mathematics and Computer Science University of Lethbridge

- Graded assignments

**Differential Equations I (Math 3600)** Fall 2010  
Department of Mathematics and Computer Science University of Lethbridge

- Graded assignments

## TUTORING

Tutor Doctor, University of Calgary, University of Lethbridge, and York University 2011–2021

- Tutored many students in all levels of elementary school, high school, college, and undergraduate

## COURSE WORK - GRADES A+ AND A

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**Graduate Courses:** Advanced Optimal Estimation Theory and Applications, Advanced Satellite Positioning, Advanced Algebra, Combinatorics, Complex Analysis, Computational Algebra and Number Theory, Field Theory, Fourier Analysis, Functional Analysis, Graph Theory, Harmonic Analysis, Topics in Design Theory, Topics in Geodesy

**Undergraduate Courses:** Algebra (I, II), Analysis (I, II, III), Calculus (I, II, III), Differential Equations, Discrete Mathematics, Linear Algebra, Numerical Analysis (I, II), Operations Research, Partial Differential Equations, Physics (I, II), Programming (I, II), Statistics and Probability (I, II), Times Series

## OTHER ACTIVITIES

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- Jointly involved in advising B. Brunson, M. Gill, A. Peidou, E. S. Ince, and D. Li on how to use the least-squares spectral and wavelet analyses in analyzing superconducting gravimeter data, GPS time series, seismic data, and other geophysical time series
- Active board member of the Calgary Tesla Society [↗](#), a non-profit organization: Give presentations in libraries, elementary and high schools, and demonstrate Tesla's inventions, such as the levitating light bulb, plasma globe, egg of Columbus, and wind turbine
- Active member of the Canadian Geophysical Union (CGU) and International Union of Geodesy and Geophysics (IUGG)
- Provide consultations to scientists regarding the earth and environmental related projects
- Scored the Canadian Open Mathematics Competition and participated in Graduate Student Info

## HOBBIES

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Hiking; Biking, Bodybuilding, Soccer, Installing and repairing electronic devices, Photography