

# Hatef Dastour

- ⌚ Website: [hatefdastour.github.io](https://hatefdastour.github.io)
- LinkedIn: [linkedin.com/in/hatefdastour](https://www.linkedin.com/in/hatefdastour)
- Github: [github.com/HatefDastour](https://github.com/HatefDastour)



## Summary of skills

Researcher, mathematics and Statistics, data scientist, and scientific programming.

## Education

- Ph.D., Mathematics and Statistics,  
University of Calgary  
📅 January 2016 - December 2019,  
📍 Calgary, Canada,
- M.S., Applied Mathematics,  
Damghan University  
📅 September 2010 - September 2012,  
📍 Damghan, Iran,
- B.S., Applied Mathematics,  
Payam Noor University  
📅 September 2006 - July 2010,  
📍 Tehran, Iran,

## Working and Teaching Experience

- Data Scientist Developer  
StellarAlgo, Calgary, AB, Canada  
Due to COVID19 pandemic, StellarAlgo terminated the contract of all of their Data Scientists on March 25, 2020.
  - Designing, developing and refining predictive models for selected business verticals.
  - Discovering and communicating relevant insights to key stakeholders for smarter decision making.
  - To explore opportunities for combining existing and new data sources to discover insights.
  - Supporting requirements gathering and data engineering efforts related to building analytics data sets.
  - Supporting application product team with automated reporting and analytics.
  - Programming according to project plans (versions, sprints).
  - Participating in data analysis and data architecture direction with valuable client-facing development insights.
  - Collaborating with the team designers to create interfaces.📅 January 2020 - March 25, 2020,
- Sessional Instructor  
Department of Mathematics and Statistics, University of Calgary, Calgary, AB, Canada
  - MATH 211 - Linear Methods I - Spring 2019
  - MATH 211 - Linear Methods I - Summer 2018
  - MATH 275 - Calculus for Engineers and Scientists - Fall 2017 (Through Instructor Training Program)📅 January 2016 - December 2019,
- Graduate Teaching Assistant  
Department of Mathematics and Statistics, University of Calgary, Calgary, AB, Canada  
I have gained teaching experience by doing a graduate teaching assistant for a variety of courses. These courses are Introductory Calculus (MATH 249), University Calculus I (MATH 265), Calculus for Engineers and Scientists (MATH 275), Multivariable Calculus for Engineers (MATH 277), Differential Equations for Engineers and Scientists (MATH 375), Numerical Analysis I (MATH 391), Numerical Analysis I (AMAT 491) and Numerical Analysis II (AMAT 493).📅 January 2016 - December 2019,

- Self-employed Mathematics Tutor Tehran, Iran  October 2010 - August 2015,

## Research Experience

- Graduate Student CALENDAR January 2016 - December 2019  
Department of Mathematics and Statistics, University of Calgary,  
Developed several robust and higher-order finite difference methods for the wave equation in both frequency and time domain.
  - Research Assistant CALENDAR February 2012 - May 2015,  
School of Mathematics, Iran University of Science and Technology  
Constructed numerical schemes using the Mollification method and the Marching scheme to estimate unknown parameters in inverse heat conduction problems
  - Graduate Student CALENDAR October 2010 - August 2012,  
School of Mathematics and Computer science, Damghan University  
Developed some numerical schemes based on the application of the Marching scheme and the Mollification method for finding the stable numerical solution of a class of semi-linear Cauchy problems.

# Computer Skills

- Proficiency with computer programming including MATLAB, Python, R, Julia Programming, and others.
  - Proficiency with SQL Server Analysis Services (SSAS).
  - Proficiency with office applications, such as Microsoft Office, L<sup>A</sup>T<sub>E</sub>X editors, and more.
  - Proficiency with advanced graphical applications, such as Adobe Photoshop, 3D Studio Max, Blender, and more.
  - Proficiency with Microsoft, Linux, and Unix command line.

## Group Projects

- 2016 Graduate Mathematical Modelling in Industry Workshop, University of British Columbia, Vancouver, BC, Canada, August 08, 2016 - August 13, 2016,  
Project: **Modelling the performance of the rechargeable Li-Ion batteries**,
  - 2016 Industrial Problem Solving Workshop, University of Toronto, Toronto, ON, Canada, August 15, 2016 - August 19, 2016,  
Project: **How to combine two relative rankings of credit risk into one ranking?**  
by Internal Ratings Management, Global Risk Management, Scotiabank.

## Awards

## Journal Publications

1. **H. Dastour** and W. Liao. “A fourth-order optimal finite difference scheme for the Helmholtz equation with PML”. *Computers & Mathematics with Applications*, 6(78):2147–2165, 2019.
2. W. Liao, P. Yong, **H. Dastour**, and J. Huang. “Efficient and accurate numerical simulation of acoustic wave propagation in a 2d heterogeneous media”. *Applied Mathematics and Computation*, 321:385–400, 2018.
3. M. Garshasbi and **H. Dastour**. “A mollified marching solution of an inverse ablation-type moving boundary problem”. *Computational and Applied Mathematics*, 35(1):61–73, 2016.
4. M. Garshasbi and **H. Dastour**. “Estimation of unknown boundary functions in an inverse heat conduction problem using a mollified marching scheme”. *Numerical Algorithms*, 68(4):769–790, 2015.
5. M. Garshasbi and **H. Dastour**. “Proportional factors estimation in an IHCP”. *Journal of Hyperstructures*, 3(1):53–67, 2014.
6. M. Garshasbi, **H. Dastour**, and M. Jalalvand. “A stable numerical solution of an inverse moving boundary problem of heat conduction using discrete mollification approach”. *Advances in Mathematical Modeling*, 2(1):47–60, 2012.
7. M. Garshasbi, P. Reihani, and **H. Dastour**. “A stable numerical solution of a class of semi-linear Cauchy problems”. *Journal of Advanced Research in Dynamical and Control Systems*, 4:56–67, 2012.

## Preprints

1. **H. Dastour** and W. Liao. “A generalized optimal fourth-order finite difference scheme for a 2D Helmholtz equation with the perfectly matched layer boundary condition”. *arXiv preprint arXiv: 1908.07403*, 2019. Also, preprint submitted to an Elsevier journal.
2. **H. Dastour** and W. Liao, “An optimal 13-point finite difference scheme for the Helmholtz equation with PML”, 2019. Preprint submitted to a Springer journal.

## Selected Presentations

1. H. Dastour, “Computational Methods for Solving Wave Equation Inverse Problem”, Eric Milner Colloquium, University of Calgary, Calgary, AB, Canada, October 14, 2016 (Colloquium Presentation).
2. H. Dastour, “A stabilized marching scheme for solving the inverse problem of degenerate diffusion model”, the Canadian Society of Applied and Industrial Mathematics (CAIMS 2016), University of Alberta, Edmonton, AB, Canada, June 28, 2016 (Conference Presentation).
3. H. Dastour, “A numerical estimation approach for an inverse heat conduction problem”, 2016 CMS Summer Meeting, University of Alberta, Edmonton, AB, Canada, June 24, 2016 (Conference Presentation).
4. H. Dastour, “A Computational Method for Solving an Inverse Heat Conduction Problem”, 2016 CMS Summer Meeting, University of Alberta, Edmonton, AB, Canada, June 25, 2016 (Conference Poster Presentation).
5. H. Dastour, “A mollified marching solution of an inverse degenerate diffusion problem in petroleum reservoir”, Alberta Mathematics Dialogue 2016, Mount Royal University, Calgary, AB, Canada, April 29, 2016 (Conference Presentation).

## Certifications

- Recognition of outstanding efforts and accomplishments on behalf of the SIAM Chapter at the University of Calgary, Canada.
- Recognition of the Completion of the Instructional Skills Workshop (ISW).
- Certificate of Appreciation for having made valuable contributions to the June 2016 Convocation Ceremonies.

## Volunteer Activities

- Contribution to 2018 Industrial Problem Solving Workshop (IPSW), University of Calgary  
📍 Calgary, Canada  August 19, 2018 - August 24, 2018,
- Serving on Mathematics and Statistics (MTST) Head Search Committee, University of Calgary,  
📍 Calgary, Canada  March 2018,
- Instructor of Programming Workshop at 2017 CMS Math Camp (Alberta), University of Calgary,  
📍 Calgary, Canada  July 2017,
- Contribution to the June 2016 convocation ceremonies, University of Calgary,  
📍 Calgary, Canada  June 2016,
- The vice-president academic of Graduate University Mathematics Society (GUMS), University of Calgary  
📍 Calgary, Canada  September 2016 - September 2018,
- The representative of graduate students of the Department of Mathematics and Statistics in the Graduate Committee of the department, University of Calgary,  
📍 Calgary, Canada  October 2016 - September 2018,
- The president of University of Calgary SIAM Student Chapter, University of Calgary,  
📍 Calgary, Canada  January 2017 - September 2018,
- Organizer of the University of Calgary Chapter of SIAM Biweekly Seminar Series  
📍 Calgary, Canada  February 2017 - April 2018,
- Organizer of Calgary Applied and Industrial Mathematical Sciences Conference  
📍 Calgary, Canada  May 21, 2017 - May 22, 2017.

## Languages

English and Persian