

**Personal Information:**

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**Research Interests:** Arithmetic Algebraic Geometry, in particular:

- $p$ -divisible groups and their moduli spaces, cohomology of Shimura varieties and Rapoport-Zink spaces, Langlands program, Galois representations
  - integral  $p$ -adic Hodge theory, rigid and de Rham-Witt cohomology theories
  - $A$ -motives, Drinfeld modular varieties,  $z$ -divisible local Anderson modules
  - Intersection theory and  $K$ -theory
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**Post PhD positions:**

- September 2014 - August 2016: Visiting Assistant Professor at **Purdue University**, USA.
  - Summer and Fall 2012: Visiting Scholar at **MIT**, USA.
  - September 2011 - August 2014: Postdoc and Harry Bateman Instructor at **Caltech**, USA.
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**Educations:**

- Fall 2010: Visiting Prof. Dr. Thomas Zink at the **University of Bielefeld**, Germany.
- Spring 2010: Visiting Prof. Dr. Ching-Li Chai at the **University of Pennsylvania**, USA.
- 2006 - 2011: Ph.D. in Mathematics at **ETHZ**, Switzerland, under the supervision of Prof. Dr. Richard Pink.
- October 2005 - February 2006: Masters Thesis at **ETHZ**, Switzerland, under the supervision of Prof. Dr. Richard Pink.
- 2004 - 2005: M.S. in Mathematics at **EPFL**, Switzerland.
- 2002 - 2004: B.S. in Mathematics at **EPFL**, Switzerland.

- 2000 - 2002: 2 years (first cycle) of Mathematics at **Sharif University of Technology**, Iran.
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### Preprints and Publications:

1. *Intersection Theory of Proper Morphisms*: in preparation.
  2. *Drinfeld Displays*: in preparation.
  3. *Tensor Operations on  $z$ -Divisible Local Anderson Modules*: in preparation.
  4. *Exterior Powers of Lubin-Tate Groups*: *J. Théor. Nombres Bordeaux* 27, 1 (2015), 77-148.
  5. *Exterior Powers of  $\pi$ -Divisible Modules over Fields*: *J. Number Theory* 138 (2014), 119-174
  6. *Exterior Powers of Barsotti-Tate Groups*: PhD thesis, available on arXiv:1009.2460
  7. *Multilinear Theory of Commutative Group Schemes*: Masters thesis, available on [hedayatzadeh.info](http://hedayatzadeh.info)
  8. *Resolutions in Model Categories*: undergraduate semester project, available on [hedayatzadeh.info](http://hedayatzadeh.info)
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**Awards:** In 2011, I was awarded a Swiss National Science Foundation research grant (PBEZP - 137334).

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### Invited Talks:

- **AMS Sectional Meeting**, Chicago, USA, October 3, 2015.
- **University of Notre Dame**, Notre Dame, USA, April 29, 2015.
- **University of Chicago**, Chicago, USA, March 3, 2015.
- **Northwestern University**, Evanston, USA, March 2, 2015.
- **Purdue University**, West Lafayette, USA, September 25, 2014.
- **UCLA**, Los Angeles, USA, November 14, 2013.
- **UCI**, Irvine, USA, October 22, 2013.
- **UCSD**, San Diego, USA, April 18, 2013.
- **Caltech**, Pasadena, USA, February 7, 2013.
- **MIT**, Cambridge, USA, October 30, 2012.
- **UCLA**, Los Angeles, USA, March 5, 2012.
- **Caltech**, Pasadena, USA, February 3, 2012.

- Caltech, Pasadena, USA, December 8, 2011.
  - University of Pennsylvania, Philadelphia, USA, May 10, 2010.
  - Mini-course: IPM, Tehran, Iran, July 22 - August 12, 2009.
  - IPM, Tehran, Iran, July 13, 2006.
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**Teaching Experience:**

- 2014-2015: Professor at Purdue University:
    - Differential Equations and Linear Algebra
  - 2011-2014: Instructor at California Institute of Technology:
    - Perfectoid Spaces
    - Arithmetic Theory of Abelian Varieties
    - Graduate Algebra
    - Local Class Field Theory
    - Algebraic Geometry
    - Graduate Number Theory
  - 2006-2011: Teaching Assistant at ETHZ:
    - Topology
    - Expander Graphs
    - Graph Theory
    - Algebra
  - Teaching Assistant at EPFL:
    - Linear Algebra
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**Other Academic Activities:**

- 2011-2013: at California Institute of Technology:
  - Member of a PhD defense examination committee
  - Member of three general examinations committees
  - Member of three candidacy examinations committees
  - Mentored two students for independent studies
  - Mentored student (Ayah Almousa) for MURF (Minority Undergraduate Research Fellowship)
  - Mentored student (Joshua Nevin) for SURF (Summer Undergraduate Research Fellowship)

- 2009-2011: at ETHZ:
    - Co-advised Masters thesis of Simon Häberli
    - Co-advised Bachelor thesis of Meriton Ibraimi
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**Language Skills:**

- Persian: mother tongue.
  - English, French, German: fluent.
  - Arabic, Italian: medium.
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**References:**

- Ching-Li Chai, *University of Pennsylvania* (chai@math.upenn.edu)
- Tong Liu, *Purdue University* (tongliu@math.purdue.edu)
- Elena Mantovan, *California Institute of Technology* (mantovan@caltech.edu)
- Dinakar Ramakrishnan, *California Institute of Technology* (dinakar@caltech.edu)
- Freydoon Shahidi, *Purdue University* (fshahidi@purdue.edu)
- James E McClure, *Purdue University* (for teaching) (mcclurej@purdue.edu)