Mohammad Hossein Shafinia

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EDUCATION
- **Sharif University of Technology**, Tehran, Iran.   Sep 2007 - Sep 2014
  - Master in Electrical Engineering, Communications, Overall **GPA** 16.25/20.0
- **Sharif University of Technology**, Tehran, Iran.   Sep. 2007 - June 2012
  - Electrical Engineering, Communications, Overall **GPA** 17.81/20.0
  - Mathematics, Pure Mathematics,
    Double major program with Electrical Engineering
- **Young Scholars club**, Tehran, Iran   Jul 2006 - May 2007
  - Preparation Course for National and International Mathematics Olympiads
- **Shahid Beheshti High School**, Kermanshah, Iran.   Sep. 2003 - Jun. 2007
    National Organization for Developing Exceptional Talents (NODET)
  - Mathematics and Physics High School Diploma, GPA: 19.96/20.0

INTERNSHIP
- **Ecole Polytechnique Federale de Lausanne**, Lausanne, Switzerland.   Summer 2011
  - Summer Internship under Supervision of Professor Cevher

HONORS AND AWARDS
- Accepted for Master Program in Communication Systems in Sharif University of Technology without any entrance exam
- **Third Prize** of International Mathematics Competition (IMC)   Summer 2011
- **Gold medalist** of Iranian Mathematics Society (IMS) competition   Spring 2011
- Offered for being in charge of the "**Young Scholar Club**" mathematics group,   June 2010
  The official institution which aims to prepare the National Mathematical
  Olympiad team for International Mathematical Olympiad (IMO)
- Selected as an Exceptional Talent in Sharif University of Technology
  and accepted for passing double major program   September 2008
- A member of Iranian National Elite Foundation   September 2007 - present
- Accepted for B. Sc. degree in Sharif University of Technology without any entrance exam because of gold medal of Iranian Mathematical Olympiad   2007
- **Gold medalist** of Iranian Mathematical Olympiad   Summer 2006

PUBLICATIONS
- M. Fatemi, S. Dashmiz, **M. H. Shafinia** and V. Cevher, "Equivalence of Synthesis and Atomic Formulations of Sparse Recovery," Submitted to IEEE International Conference on Acoustics, Speech and Signal Processing 2012, September 2011.
- P. Kabir, **M. H. Shafinia**, P. Pad and F. Marvasti, "Capacity of Synchronous CDMA Systems with Near-Far Effects and Design of Suboptimum Signature Codes," Submitted to IEEE Transactions on Information Theory, July 2011.
- **M. H. Shafinia**, P. Kabir, P. Pad, S. M. Mansouri and F. Marvasti, "Errorless Codes For CDMA Systems with Near-Far Effect," In Proc. IEEE International Conference on Communications 2010, Cape Town, South Africa, May 2010.

ATENDED CONFERENCE
- IEEE International Conference on Communications, Cape Town, South Africa   May 2010

PRESENTATIONS
- "On the Capacity Bounds for CDMA Systems", Tehran, Iran   June 2010
    Information Theory and Coding Workshop Organized by Advanced
    Communications Research Institute (ACRI) and Center of Excellence
    in Multi-Access Communications of Electrical Engineering Department,
    Sharif University of Technology

	• "Information Geometry", Tehran, Iran December 2010
	    A Lecture at the Differential Geometry course,
	    Department of Mathematics, Sharif University of Technology

CURRENT RESEARCH ACTIVITIES

- Estimating the channel capacity of near-far effects in CDMA systems with Professor Marvasti; the resulting journal paper is going to be submitted to IEEE transaction of communication
- Sparse signal recovery using optimizations methods with Professor Cevher; the resulting conference paper is submitted to IEEE International Conference on Acoustics, Speech, and Signal Processing

WORKING EXPERIENCE

- **Founder and Board Member of "Nimkat" Educational Start-up**
- **Mentor of the Summer School Program, Iranian Mathematical Olympiad**
  Managing a two months program for selecting the gold medalists   Jul. 2010 - Sep. 2010
- **Gold Medalists' Mentor, Iranian Mathematical Olympiad**
  Managing a four month course for preparing the gold medalists for IMO   Nov. 2010 - Feb. 2011
- **Member of the Scientific Committee, Iranian Mathematical Olympiad**
  Designing problems, Grading exams   2010 - 2011

TEACHING EXPERIENCE

- **Teaching Assistant, Sharif University of Technology**
  Teaching assistant for the course *Communication Systems*
  Teaching assistant for the course *Convex Optimization*
  Teaching assistant for the course *Wireless Networks*
  Teaching assistant for the course *Signals and Systems*
- **Teaching Topics in Mathematical Olympiad**
  Teaching Combinatorics, Kherad High School, Tehran, Iran   2011
  Teaching Combinatorics, Allameh Helli High School, Tehran, Iran   2010
  Teaching Number Theory, Shahid Beheshti High School, Kermanshah, Iran   2007 - 2009
  Teaching Combinatorics and Number Theory, Tabriz, Iran   2007

MATHEMATICAL BACKGROUND

During my double major education, while being a Gold medalist in National Mathematics Olympiad, I have obtained a deep knowledge in a variety of mathematical subjects:

- Abstract Algebra, Algebraic Number Theory, Division Rings, Field and Gallois Theory
- Linear Algebra and Functional Analysis
- General Topology and Differential Geometry
- Stochastic Processes, Probability Theory and Measure Theory
- Number Theory, Graph Theory and other branches of Discrete Mathematics
- Mathematical Logic

SKILLS

- *Human Languages:* Proficient in Persian (Native) and English (Reading, Writing, Listening, Speaking), Familiar with Arabic (Reading, Listening, Writing)
- *Programing Languages:* Mathematica, Matlab, Simulink, Mathcad, C/C++, Quartus II, PSpice
- *Typesetting:* TeX, LaTeX, iWork Pages, Microsoft Word

ACTIVITIES

- Diving, Swimming, Bicycling, Mountain Climbing