

Mohammadreza Malek Mohammadi

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Education:

- **M.Sc.**, Electrical Engineering, Sharif University of Technology Tehran, Iran, September 2001-January 2004; GPA: 17.21/20.
- **B.Sc.**, Electrical Engineering, Sharif University of Technology Tehran, Iran, September 1997-September 2001; GPA: 17.46/20.
- **High School Diploma**, Alborz High School Tehran, Iran, 1997; GPA: 18.99/20.

Awards & Honors:

- Ranked 14th among all 174 electrical engineering students at Sharif University of Technology during B.Sc.
- Ranked 90th among 300,000 participants in the National Universities Entrance.
- ITRC (Iran Telecommunication Research Center) research grant for M.Sc. thesis.

Teaching Experiences:

- Teacher's Assistant of "Electronics I Lab", Sharif University of Technology. **Fall 2002**
- Teacher's Assistant of "Electronics I Lab", Sharif University of Technology. **Spring 2003**
- Teacher's Assistant of "Electronics I Lab", Sharif University of Technology. **Summer 2003**
- Teacher's Assistant of "Electronics II Lab", Sharif University of Technology. **Summer 2003**
- Reviser and editor of "Electronics I Lab Instruction Manual", Sharif University of Technology. **Spring 2003**

Research Experiences:

- Research and study about array signal processing **May 2005 - present** with special interest on application to radio direction finding and digital beam forming. (Research supervisor: Prof. Ali Akbar Tadaion. He is now with the Electrical engineering School of Yazd University). Including:
 - DOA estimation techniques: sub-space methods, beam-space methods, ML approach, and blind methods.
 - Digital beam forming techniques.
 - Source enumeration techniques.
 - Array calibration algorithms.
 - Efficient numerical implementation.
- **Research Assistant**, Sharif University of Technology **Spring 2004 – Spring 2005** (Research advisor: Prof. M.H. Alavi)
"Design and Implementation of an Integrated Laboratory (IntLab) for students".
- Research and study about UWB Communications **October 2001 - June 2002** at the National Organization for Development of Exceptional Talents (NODET).
- Research and study about digital IF receivers for satellite communications.
- Research and study about Electromagnetic Compatibility (EMC) considerations in mixed-mode PCB design.

Publications:

- F. Haddadi, M. Malek Mohammadi, M.M. Nayebi, M.R. Aref, "Statistical Performance Analysis of Detection of Signals by Information Theoretic Criteria", Submitted to IEEE Trans. On Signal Processing.
- M. Malek Mohammadi, A. Moqiseh, M.M. Nayebi, "Surveillance Radar Target Detection with the Fourier-Hough Transform", Accepted in IEEE International Radar Symposium 2008.
- M. Malek Mohammadi, A. Moqiseh, M.M. Nayebi, "Noncoherent Integration of UWB RADAR Signals using the Hough Transform", Accepted in the European RADAR Conference 2008.
- M. Malek Mohammadi, H. Mohseni, M.H. Alavi, "A Direct-Conversion Based High Resolution Spectrum Analyzer", Accepted in IEEE Applied Electronics Conference 2008.
- H. Mohseni, M. Malek Mohammadi, M.H. Alavi, "A New Method for Implementation of Radio Frequency Power Meters", Accepted in IEEE Applied Electronics Conference 2008.
- "Radio Direction Finding Algorithms", Technical report, spring 2006.
- "An introduction to digital IF receiver", Technical report, winter 2005.
- "An introduction to satellite communications", Technical report, fall 2006.
- "An introduction to UWB communications", NODET technical report, spring 2002.

Employment:

- Jooyandegan Fanavari, Design Engineer **January 2004 - present**
- NODET, Research Engineer **October 2001 - June 2002**
(National Organization for Development of Exceptional Talents)

Accomplished Projects & Term Papers:

- "Design and implementation of a spectrum analyzer", **M.Sc. thesis**, under supervision of Prof. M.H. Alavi.
- "A monopulse Radar IF Board, design and improvement", **B.Sc. project**, under supervision of Prof. M.M. Nayebi.
- "Design and implementation of 6-channel digital IF receiver with 96MHz input sampling and 14-bit resolution using AD6654", Fall 2007.
- "Design and implementation of coherent 4-channel, 130MSPS, 16-bit Data Acquisition Card using AD9461", Winter 2008 to present.
- "Design and implementation of digital signal processing unit of a Doppler speed meter using TMS320F2810".
- "Design and implementation of digital signal processing unit of a Doppler speed meter (Improved Version) using TMS320VC5509A".
- "Implementation of a complete digital IF receiver using echotek ECDR-GC314-PCI board"
- "Design and implementation of a 10MHz spectrum analyzer for IntLab project", under supervision of Prof. M.H. Alavi.
- "Design of An 80db, fast settling time, high swing CMOS class AB amplifier", under supervision of Prof. Sharif Bakhtiar (Fall 2001).
- "Design of An 80db, fast settling time, high swing CMOS amplifier", under supervision of Prof. Sharif Bakhtiar (Fall 2001).
- "Design of A 2.4v Voltage regulator in two different topologies: Maximize and Optimizing BW, CMRR with Constraints on Power Consumption and tolerance", under supervision of Prof. Fotowat Ahmedi.(Fall 2000).

- Design and Implementation of a Remote Controller, Under Supervision of Prof. K. Nayebi (summer and fall 2000).
- “Development of software for modeling and analyzing digital circuits with graphical interface”, under supervision of Prof. Vosooghi Vahdat
- “Design of a Process Controller (hardware and software)”, under supervision of Prof. Sanaee (Summer 2000)
- “Design of the hardware and Software for an Automatic Bank”, under supervision of Prof. Jahed (Fall 1999)
- “An Introduction to Direct Digital Synthesizer”, under supervision of Prof. Faez (Fall 2003).

Skills:

- **Some of the Courses taken:**
 - Spread Spectrum Communications
 - Radar Systems
 - Communication systems I & II
 - Discrete time Signal Processing
 - Advanced Software Programming
 - CMOS Circuit Design I
 - Theory and Technology of IC Production
 - Advanced Electronics (High Frequency Electronics)
 - Integrated Circuits Applications
 - RF Circuits
- **Software skills:**
 - EE: SPICE, MATLAB, SIMULINK, PROTEL, Max Plus, ADS2002, Orcad, Spectra, Cadence PSD, Code Composer Studio, XILINX ISE, ...
 - Other: VHDL, Basic, Pascal, C++, Assembly, Delphi, ...
- **DSP Skills:**
 - Some professional experiences in working with TMS320C6000, TMS320C5000, and TMS320C2000