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Tehran
Iran

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Personal Information

First Name: Ali
Last Name: Jalali
Birth Date: July, 1982
Gender: Male

Education

Computer Engineering Department,
Sharif University of Technology
Tehran, Iran

Master of Science in Information Technology,
Major in Information Theory
2005-Present

Thesis: Information Theoretic Approach to Distributed Video Coding
Supervised by Dr. H. R. Rabiee

Electrical Engineering Department,
Sharif University of Technology
Tehran, Iran

Bachelor of Science in Electrical Engineering,
Major in Adaptive Control
1999-2004

Thesis: Designing and developing an adaptive interharmony meter for power line
Supervised by Dr. H. Mokhtari

Allameh Helli High-School, N.O.D.E.T
Tehran, Iran

Diploma in Mathematics & Physics
1995-1999

Research Interests

- Information Theory
 - Distributed source coding
 - Distributed video coding
 - Joint source-channel coding
 - Transform-based coding
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Research Experience

Digital Media Lab.
No. 408, Khodro building,
Sharif University of Technology

Research Assistant
Fall 2005 - Present

Supervised By *Dr. H. R. Rabiee*

Research on distributed source coding schemes. Applying such a scheme to the video as an special signal. Designing a distributed coding scheme for video coding based on H.264.

Advanced Instrumentation Lab.
Electronic Reasearch Center,
Sharif University of Technology

Research Assistant
Fall 2002 - Fall 2005

Supervised By *Prof. H. Ravanbod*

Designing and implementing an ultrasonic inspection system for nondestructive testing of metal materials major in crack detection and classification.

Advanced Telecommunication Lab.

Electrical Engineering Department,
Sharif University of Technology

Research Assistant

Fall 2001 - Fall 2002

Supervised By *Dr. F. Behnia*

Designing and implementing an OFDM modem with capacity of 1024 carriers for fault tolerant data communication on power lines.

Publications

- Ali Jalali and Hamid R. Rabiee. "A General Framework for Distributed Source Coding," Submitted to IEEE Trans. on Information Theory, 2006.
- Ali Jalali and Hamid R. Rabiee. "A Framework for Distributed Layered Source Coding," Submitted to Elsevier Journal of Complexity, 2006.
- Ali Jalali and Hamid Sarbazi Azad. "Edge graph product," to be Submitted to SIAM Journal of Graph Theory, 2006.
- Hossein Ravanbod and Ali Jalali. "Configurable error-verified adaptive wavelet-based defect classification and volume estimation of oil pipelines," Part I, Part II, Submitted to IEEE Trans. on Ultrasonics, Ferroelectrics and Frequency Control, 2006.

Teaching Experience

Stochastic Processes

Computer Engineering Department
Sharif University of Technology
Tehran, Iran

Teaching Assistant

Fall 2006

Probability & Statistics

Electrical Engineering Department
Sharif University of Technology
Tehran, Iran

Teaching Assistant

Fall 2004

Elementary Differential Equations

Mathematical Sciences Department
Sharif University of Technology
Tehran, Iran

Teaching Assistant

Spring 2001, Fall 2001,
Spring 2002, Fall 2002,
Spring 2003

Workshop on Source Coding

Iranian Artificial Intelligence Society
Tehran, Iran

Lecturer

Spring 2006

Workshop on Math Teaching

National Organization for Developing
Exceptional Talents (N.O.D.E.T)
Tehran, Iran

Lecturer

Summer 2003

K10 Statistics & Modelling

Allameh Helli High-School
Tehran, Iran

Teacher

Fall 2003, Spring 2004

Awards and Honors

- Ranked 16st among more than 100,000 graduate applicants in the Graduate Iranian Nationwide University Entrance Exams (Arshad Konkoor), 2005

- Ranked 39st among more than 600,000 undergraduate applicants in the Undergraduate Iranian Nationwide University Entrance Exams (Sarasari Konkoor), 1999
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Accomplished Academic Projects

- **Generalizing Wyner-Ziv constraints to any arbitrary number of information sources**
(*Data Compression course, Spring 2006*)
 - Proposing generalized rate-entropy constraints for lossy & lossless source coding, Submitted to IEEE Trans. Information Theory
 - **Graph product analysis for interconnection networks**
(*Interconnection Networks course, Spring 2006*)
 - **A New Algorithm for Packet Classification over IP**
(*Advanced Network course, Spring 2006*)
 - **Generalized Sidelobe Canceller for A Microphone Array**
(*Speech Processing course, Spring 2006*)
 - **Design and Developing An Interharmony Meter for Power Line**
(*B. Sc. Project, Fall 2004*)
 - **Design and Implementation of a Software for Calculation of the Electrical Field of an Arbitrarily Distributed Superficial Charge in an Arbitrary Point of Space**
(*Physics II course, Fall 2000*)
-

Professional Experience

Iranian Telecommunication Research Center
3rd Floor, North Kargar St., Amir Abad,
Tehran, Iran
<http://www.itrc.ac.ir/>

ICT Research Organizer

Fall 2005 - Present

- Researcher of Center of Excellence of Information Technology

Hamyar Fan Co.
No. 10, Sayeh Lane, Vali Asr (AJ) St.,
Tehran, Iran

Power Line Smart Relays

Fall 2002 - Summer 2005

- Member of Research and Development Group
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Professional Skills

- Programming Languages : C, C++, Delphi, Pascal and Assembly
 - Mathematical Analysis and Simulation using MATLAB® and Simulink®
 - Designing and Simulation of Analog and Digital Systems using MAX-PLUS and Quartus
 - Design and Developing High Frequency Multi-Layered PCBs
-

Languages

Persian: Native

English:

- Listening: Excellent
- Speaking: Good
- Reading: Excellent
- Writing: Good

References

Hamid Reza Rabiee

Sharif University of Technology,
Computer Engineering Department

Assistant Professor

e-mail: rabiee@sharif.edu

Mohammad Reza Aref

Sharif University of Technology,
Electrical Engineering Department

Professor

e-mail: aref@sharif.edu

Hossein Ravanbod

Sharif University of Technology,
Electronic Research Center, Electrical
Engineering Department

Professor

e-mail: ravanbod@sharif.edu

Mohammed Ghanbari

University of Essex,
Department of Electronic Systems Engineering

Professor

e-mail: ghan@essex.ac.uk