

Shayan Oveis Gharan

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RESEARCH ◇ Computer Graphics; Realtime Animation

INTERESTS

- ◇ Network Design
- ◇ Computational Geometry
- ◇ Design and Analysis of Algorithms
- ◇ Graph Theory and Combinatorics

EDUCATION Sharif University of Technology, Tehran, IRAN. September 2004 - June 2008

B.S. in Computer Engineering, **GPA: 18.4/20 (last year: 18.9/20)**.

Relevant Coursework (GPA 19.3/20): Data Structures and Algorithms, Design and Analysis of Algorithms, Compilers, Artificial Intelligence, Computer Networks, Complexity Theory, Advanced Programming, Computational Geometry(Grad.), Advanced Topics in Software Engineering(Web Programming), Modern Information Retrieval, Operating Systems.

Shahid Ejei High School, Esfahan, IRAN. Sep 2000 - June 2004

Affiliated with the National Organization for the Development of Exceptional Talents (NODET)

Diploma in Physics and Mathematics Discipline.

HONORS AND AWARDS ◇ Ranked **2nd** in Cumulative GPA among more than 100 students of the department, 2004 beginners, Sharif University of Technology, Sep 2007

- ◇ **2nd Team** in ACM-ICPC Regional Contest, 2005, Tehran, IRAN.
- ◇ **3rd Team** in ACM-ICPC Regional Contest, 2007, Tehran, IRAN.
- ◇ **7th Team** in ACM-ICPC Regional Contest, 2004, Tehran, IRAN.
- ◇ **Gold Medal** in International Olympiad in Informatics (IOI) 2004, in Greece.
- ◇ **Silver Medal** in Central European Olympiad in Informatics (CEOI) 2003, in Germany.
- ◇ **Gold Medal** in Iranian National Olympiad in Informatics, 2003
- ◇ **Gold Medal** in Iranian National Olympiad in Informatics, 2002
- ◇ Awarded as **Outstanding Student** by university president, 2005 and 2006

PUBLICATION ◇ **Minimizing Movement**

(joint work with E. Demaine, M. Hajiaghayi, H. Mahini, A. Sayedi and M. Zadimoghaddam) in *Proceedings of the 18th Annual ACM-SIAM Symposium on Discrete Algorithms (SODA 2007)*, New Orleans, Louisiana, January 7-9, 2007, pages 258-267.

◇ **Spanning Trees with Minimum Weighted Degrees**

(joint work with M. Ghodsi, H. Mahini, K. Mirjalali, A. Sayedi, M. Zadimoghaddam) Accepted in *Journal of the Information Processing Letters*, 2007, volume 104, pages 113-116.

TEACHING AND WORK EXPERIENCE ◇ **Design and implementation of a high speed Realtime Virtual Studio**, Aug 2006-Nov 2007, Tehran.

The project was defined by Islamic Republic of Iran Broadcasting Organization and accomplished in the Basirtech Company. Here, you can find a brief description of the project.

◇ **Developing Sharif OnlineJudge Project**, Winter and Spring 2006

The goal is to design and develop a computer system, similar to other OnlineJudges in the world, to promote ACM-ICPC trainings and to find the programming talents in high schools. Here is the result.

- ◇ **Teaching Advanced C++ Programming** , Fall 2005
The course maintained by the Students' Scientific Chapter of Sharif University of Technology. Slides and exercises are available at the course web site; A joint work with Seyed Amin Sayedi Rosh khar.
 - ◇ **Technical and System Manager**, for holding the 1st and 2nd Norouz Contest, Spring 2006 and 2007; the contest was meant to select the Iranian National IOI team members.
 - ◇ **Member of the Scientific Committee at Young Scholars' Club**, June 2004 - present;
Teaching algorithmics, mathematics and programming; Designing and grading problems for training camps; Discussing different training methods; Building an environment for automated testing of students' programs.
 - ◇ **Member of the National Committee at Young Scholars' Club**, Oct 2005-Oct 2007
Organizing and holding nation-wide high school contests. Discussing long-term, more general strategies; Devising new plans for the training camps.
 - ◇ **Head of the Winter Camp at Young Scholars' Club**, Fall 2007
Coordinating trainers and teaching material, giving weekly reports, short time planning and holding exams. The camp incorporated more than 21 high school students and a group of more than 10 trainers teaching them algorithm basics and programming.
 - ◇ **Teaching Assistant, Sharif University of Technology** Data Structure and Algorithms course (Fall 2005)
Responsibilities included: holding discussion and problem solving classes; designing problems for quizzes (and exams); grading exercises and exam problems; grading programming projects and maintaining course web site.
 - ◇ **Teaching Special Topics in Mathematics**, Winter and Spring 2003-2007
Teaching "Special Topics in Mathematics" to High School students who wanted to prepare for mathematics competitions. Teaching material included "Discrete Mathematics", "Combinatorics", "Algorithm Design" "Graph Theory", and "Problem Solving Strategies".
- RESEARCH EXPERIENCE
- ◇ **Movement Problems in Graphs** in *Institute for Studies in Theoretical Physics and Mathematics (IPM)*, Fall 2005-Spring 2006;
a joint work with M. Hajiaghayi, E Demaine, H. Mahini, A. Sayedi and M. Zadimoghaddam; appeared in **SODA 2007**.
 - ◇ **Finding Spanning Trees with Minimum value of Maximum Weighted Degree** in *Theory Group Lab. Sharif University of Technology*, Spring and Summer 2005;
a joint work with Prof. Mohammad ghodsi, H. Mahini, K. Mirjalali, A. Sayedi and M. Zadimoghaddam published in **IPL 2007**.
 - ◇ **Applying Particle Swarm Optimization algorithm to Dynamic Time Warping in Speech Recognition** in *Artificial Intelligence Lab. Sharif University of Technology*, Fall 2007
; a joint work with M. Saniee and S. Rategh, in preparation to be submitted to an Artificial Intelligence Conference.
 - ◇ **Designing efficient algorithms for solving the two dimensional visibility problem** in *Computational Geometry Group Lab. Sharif University of Technology*, Spring and Summer 2006;
a joint work with Prof. Mohammad ghodsi, M. Norouzi A. Mehrabian H. Mahini.
- INVITED TALKS
- ◇ **Problem Solving**, Fall 2006
A lecture was given as a guide for ACM-ICPC contestants, in the ACM-ICPC Tehran Contest's Workshop.
- SKILLS
- ◇ Human Languages: Proficient in Persian (Native) and English (Reading, Writing, Listening, Speaking); Arabic(Reading).
 - ◇ Programming Languages: C, Java, C++, Assembly (Intel, Motorola 68000)
 - ◇ Operating Systems: Linux, Dos, Windows(95/98/NT/2000/XP)
 - ◇ Web/DB Technologies: HTML, PHP, MYSQL, J2EE
 - ◇ Scripting Languages: Shell(Bourne), sed
 - ◇ Typesetting: T_EX, L^AT_EX, Microsoft Word

TEST
SCORES

- ◇ **TOEFL** (Nov 2007): Internet-Based Test **87/120**
Reading (18/30), Listening (25/30), Speaking (23/30), Writing (21/30).
- ◇ **GRE General** (Sep 2007): *Analytical (3.0/6.0), Verbal (280/800), Quantitative (800/800).*