Ali Mortazavi

Contact Information

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Education

Amirkabir University of Technology (Tehran Polytechnic), Tehran, Iran

B.Sc. Computer Software Engineering, 2013 – 2017
CGPA: Overall **18.47 / 20 (3.78/4)**
Selected Course **19.33 / 20 (4/4)**

Research Interests

- Algorithmic Game Theory
- Online Algorithms
- Mechanism Design
- Online Learning

Honors and Awards

- **Ranked 3rd** (out of 100) in term of Cumulative GPA among students of computer engineering of 2013 Entrance 2017
- Awarded as Outstanding Student in Amirkabir University of Technology 2015-2017
- Awarded direct admission to M.Sc. program in **Artificial Intelligence** at *Amirkabir University of Technology* as Talented Undergraduate Student 2017
- **Ranked 19th** in the Final Stage in **National Scientific Olympiad** of Computer Engineering 2016
- Qualified in the Selection Exam of **National Scientific Olympiad** of Computer Engineering 2016
  Qualified as 9th among the students in all the Universities in the Tehran Region
- **Ranked 1st** in Mathematics Team Selection Exam 2015
- **Ranked Top 0.8%** In The Country-wide University Entrance Exam 2013

Research Experience

Implementation and Evaluation of "Genetic" and "Simulated Annealing" Algorithms for Extended Travelling Salesman Problem, B.Sc. Thesis, [code] [report]
Under the supervision of Dr. Razazi at Amirkabir University of Technology

In this project, we tested the performance of two different heuristic approaches to solve an NP-Complete Problem. This problem is an extended version of the Travelling Salesman Problem. Since our approach is heuristic, there is no guaranty to find a global optimum answer. Therefore, we needed some other exact approach for computing the global optimum. For this purpose, we reduced our problem to an Integer Linear Programming Instance. So in small graph samples, we could compare our results with the optimum solution and for the large graph samples, we just compared our two different methods with each other.

Teaching Experience

- **Probability and Statistics**, Teaching Assistant spring 2018
  Under Supervision of Prof. Amirhaeri (haeri@aut.ac.ir)
- **Special Class for Olympiad Preparation**, Instructor spring 2017 and 2018
  Intro. To Theory of Computation, Algorithm Design
- **Algorithm Design**, Teaching Assistant spring 2017
  Under Supervision of Prof. Rahmati (zrahmati@aut.ac.ir)
- **Algorithm Design**, Teaching Assistant spring 2016
  Under Supervision of Prof. Mousavi (srm@aut.ac.ir)

Highlighted Courses

- Probability and Statistics 20/20
- Stochastic Processes 20/20
- Data Mining 19/20
- Artificial Intelligence 20/20
- Probabilistic Graphical Models 17/20
- Statistical Machine Learning 20/20
- Data Structures 20/20
- Algorithm Design 20/20
- Advanced Topics in Algorithms 20/20
- Theory of Computation 20/20
- Discrete Mathematics 17.5/20

Attended Conferences and Seminars

- **Workshop on Data Science and Combinatorial Algorithms** April 2019
  An introduction to "mechanism design and differential privac" by Dr. Mahdian, "Clustering and stable instances" by Prof. Salavatipour, and other talks.
- **Short course on Information Design** December 2018
  An introduction to information design by Prof. Haghpanah.
- **Block Chain and Cryptocurrency** February 2018
  An introduction to Block Chain Mechanism and different Cryptocurrency systems. By Prof. Hatami and Prof. Salavati.
- **Journal Club at IPM** Augest 2017 - October 2017
  Weekly seminars in Cognitive Science hosted by Prof. Abbasian.
- **Workshop on Game Theory** February 2017
  An introduction by Prof. Salavati to Game Theory Concepts.

Academic Projects

Image Denoising and Segmentation Using Markov Random Field [code][report]
Optimizing energy function using Simulated Annealing, Comparing different color spaces results.
Text Summarization [code][report]
Extracting important sentences as a summary using page rank algorithm and word2vec.
Text Classification [code][report]
Using different metrics (mutual information, information gain, etc.) for extracting important words for document classification task.

Skills

- **Theoretical Skills**
  Mathematics, Probability and Statistics, Algorithms
- **Technical Skills**
  Python, Java, C/C++

Languages

- **Persian**: Native
- **English**: TOEFL: 99 (Reading: 23, Listening: 28, Speaking: 23, Writing: 25)
  GRE General: 317 (Quantitative: 167, Verbal: 150, Writing: 3.0)