

# Ali Mortazavi

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## 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) [Ranked 3<sup>rd</sup>]  
**Selected Course** 19.33 / 20 (4/4)

## RESEARCH INTERESTS

- Statistical Machine Learning
- Optimization
- Sequential Prediction
- Mechanism Design in Game Theory

## 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.

## HONORS AND AWARDS

- **Ranked 3<sup>rd</sup>** (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 19<sup>th</sup>** 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 9<sup>th</sup>** among the students in all the Universities in the Tehran Region
- **Ranked 1<sup>st</sup>** in Mathematics Team Selection Exam 2015
- **Ranked Top 0.8%** In The Country-wide University Entrance Exam 2013

## 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 sentence 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.

TEACHING EXPERIENCE	<ul style="list-style-type: none"> <li>• <b>Probability and Statistics</b>, Teaching Assistant Under Supervision of Prof. Amirhaeri (<a href="mailto:haeri@aut.ac.ir">haeri@aut.ac.ir</a>) spring 2018</li> <li>• <b>Special Class for Olympiad Preparation</b>, Instructor Intro. To Theory of Computation, Algorithm Design spring 2017 and 2018</li> <li>• <b>Algorithm Design</b>, Teaching Assistant Under Supervision of Prof. Rahmati (<a href="mailto:zrahmati@aut.ac.ir">zrahmati@aut.ac.ir</a>) spring 2017</li> <li>• <b>Algorithm Design</b>, Teaching Assistant Under Supervision of Prof. Mousavi (<a href="mailto:srm@aut.ac.ir">srm@aut.ac.ir</a>) spring 2016</li> </ul>
HIGHLIGHTED COURSES	<ul style="list-style-type: none"> <li>• Probability and Statistics 20/20</li> <li>• Stochastic Processes 20/20</li> <li>• Data Mining 19/20</li> <li>• Artificial Intelligence 20/20</li> <li>• Data Storage and Retrieval 20/20</li> <li>• Audited Statistical Machine Learning and Probabilistic Graphical Models</li> <li>• Data Structures 20/20</li> <li>• Algorithm Design 20/20</li> <li>• Advanced Topics in Algorithms 20/20</li> <li>• Theory of Computation 20/20</li> </ul>
ATTENDED CONFERENCES AND SEMINARS	<ul style="list-style-type: none"> <li>• <b>Deep Learning Summer School at University of Tehran</b> August 2018 An introduction to Deep Learning and different research Areas.</li> <li>• <b>Block Chain and Cryptocurrency</b> February 2018 An introduction to Block Chain Mechanism and different Cryptocurrency systems. By Dr. Hatami and Dr. Salavati</li> <li>• <b>Workshop on Game Theory</b> February 2017 An introduction by Dr. Salavati to Game Theory Concepts (Nash Equilibrium, Expected Pay off, Repeated Games, Auctions, etc.)</li> </ul>
SKILLS	<ul style="list-style-type: none"> <li>• <b>Theoretical Skills</b> Mathematics, Probability and Statistics, Algorithms</li> <li>• <b>Technical Skills</b> Python (NumPy, Scikit, NLTK), Java, C/C++</li> </ul>
TALKS	<ul style="list-style-type: none"> <li>• <b>A brief summary to The Theory of Computation</b> May 2018</li> <li>• <b>What is Natural Language Processing</b> May 2017</li> <li>• <b>Can computers have emotion?</b> June 2016</li> </ul>
LANGUAGES	<ul style="list-style-type: none"> <li>• <b>Persian</b>: Native</li> <li>• <b>English</b>: TOEFL: 99 (Reading: 23, Listening: 28, Speaking: 23, Writing: 25) GRE General: 317 (Quantitative: 167, Verbal: 150)</li> </ul>
OTHER ACTIVITIES	<ul style="list-style-type: none"> <li>• <b>Piano</b> 2018 Recently I have started to learn piano.</li> <li>• <b>Citywide Amirkabir Programming League Staff</b> 2016 I was member of problem designing team.</li> <li>• <b>Basketball Team Member</b> 2015 Ranked 4<sup>th</sup> in the Amirkabir University of Technology Basketball Cup with the Computer Engineering Team</li> </ul>