



# Mohamad Assari



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[mohamad-assari.github.io](https://mohamad-assari.github.io)



[GitHub](#)

[Linked in](#)

## Education

### Double Major Student in Computer Engineering and Physics

#### B.Sc. in Computer Engineering

[Amirkabir University of Technology \(Tehran Polytechnic\)](#), Iran 2014-present

GPA: 3.70/4.00 (17.28/20) (100 units)

#### B.Sc. in Physics (Graduated)

[Amirkabir University of Technology \(Tehran Polytechnic\)](#), Iran 2014-2019

GPA: 3.78/4.00 (17.85/20) (141 units)

#### High School Diploma in Mathematics & Physics

[NODET](#)(Tizhushan) Beheshti high school Rey, Tehran, Iran 2010-2014

GPA: 19.25/20

## Research Interests

Algorithms  
Complexity Theory  
Graph Theory  
Parallel/Distributed Computing  
Quantum Information

## Honors and Accomplishments

Ranked **1st** in second semester and **2<sup>nd</sup>** in Cumulative GPA among all 2014 entry students in Physics Department, Amirkabir University of Technology (Tehran Polytechnic), Iran - 2019

Granted permission to double major in any field **fully funded** due to having a GPA of more than 17/20 for all first four semesters - 2016

Admitted to study Physics **fully funded** at Amirkabir University of Technology due to outstanding performance in the National Entrance Examination for Iranian Universities, **Mathematics and Engineering** – 2014

Ranked Top **2%** in the National Entrance Examination for Iranian Universities, **Foreign Languages** - 2014

Passed **27 units** in one semester with **GPA of 18.61/20** - 2018

Scored **830/990** in **Physics subject GRE** test - September 2018

Accepted in entrance exam of [NODET](#)(National Organization for Development of Exceptional Talents) high schools - 2010

Accepted in entrance exam of [NODET](#)(National Organization for Development of Exceptional Talents) junior high schools - 2007

## Selected Courses

### Computer Engineering courses:

<b>Algorithm Design</b>	<b>20/20</b>
The only student who scored full mark in this course	
Operating Systems	<b>19.9/20</b>
Application of Artificial Intelligence	<b>17.93/20</b>
Principles of Database Design	<b>16.2/20</b>
Engineering Statistics	<b>19.25/20</b>
Applied Linear Algebra	<b>16.31/20</b>
Software Engineering I	<b>18.60/20</b>
Theory of Machines & Languages	<b>16.5/20</b>
Research Method & Report Writings	<b>19/20</b>
Technical English	<b>18.58/20</b>
Math. II	<b>18/20</b>
Math. I	<b>19/20</b>
Engineering Mathematics	<b>16/20</b>
Advanced Computer programming	<b>16/20</b>
Principles of Computer & programming	<b>20/20</b>

### Physics courses:

Modern Physics	<b>19.25/20</b>
Electromagnetism(I)	<b>18/20</b>
Laser Physics	<b>20/20</b>
Optics	<b>19/20</b>
Bio Physics	<b>17/20</b>
Acoustics	<b>19.5/20</b>
Project Physics	<b>20/20</b>

Math. Physics(III)	17/20
Specialized English Physics	19.5/20
Solid State Physics	18/20
Thermodynamics & Statistical Physics(II)	20/20
Analytical Mechanics(II)	19.71/20
Analytical Mechanics(I)	20/20
Astronomy & Astrophysics	20/20

## Teaching Assistant

### Algorithm Design – Fall 2019

Amirkabir University of Technology, Under Supervision of Prof. Bourbour

### Algorithm Design – Winter 2018

Amirkabir University of Technology, Under Supervision of Prof. Bourbour

## Research Experience

### Research & Development Engineer at Mivanet Company, Under Supervision of Prof. Bourbour

**Topics:** Graph sampling from distance matrices using Spanning trees(minimum spanning tree, maximum spanning tree, ...) and visualization of average shortest path, closeness centrality and betweenness centrality in these graphs  
The project was developed using some python libraries such as networkx, numpy and graphviz. [Click to visit](#) – Summer 2019

I have recently started to work on my undergraduate thesis: "design and implementation of a system for sampling of large graphs using spanning trees" under supervision of **Prof. Bourbour** and **Prof. Nickabadi** – November 2019

## Computer Skills

**Languages:** Python, Java, C & C++, SQL

**Typesetting:** Latex, LibreOffice, Microsoft Word

**Operating Systems:** Linux (Manjaro, Ubuntu), Windows

## Languages

**Persian:** Mother Tongue (Native)

**English:** Full Professional Proficiency (Fluent)

TOEFL iBT (November 2, 2018): **95/120**

(Reading: 26, Listening 23, Speaking 24, Writing 22)

**Arabic:** Basic

## **Selected Class Projects (click to visit)**

**Algorithm Design:** Implementation of Travelling salesman problem using both nearest neighbor algorithm and Exhaustive algorithm also comparing their complexities

**Algorithm Design:** Devising an efficient dynamic programming algorithm that finds optimal solution of a **Dynamic Programming** problem

**Artificial Intelligence:** Solving Sliding Puzzle problem using A\*, BFS, Bilateral, DFS and Uniform cost algorithms also comparing their complexities

**Artificial Intelligence:** Devising a genetic algorithm for regression of third degree polynomial

**Data Structures:** Implementation of a text query using BST, TST and Trie that can also take logical phrases as input

**Advanced Programming:** Implementation of XO game using Automata

**Advanced Programming:** Design and Implementation of Pac-Man game using multithreading

**Theory of Machines & Languages:** Implementation of DFA to detect whether or not a string belongs to regular languages

**Theory of Machines & Languages:** changing NFA to DFA

## **References**

- **Ahmad Nickabadi, Assistant Professor:**  
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[Computer Engineering and IT Department](#), Amirkabir University of Technology
- **Sara Bourbour Hosseinbeigi, Visiting Professor:**  
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