

# Erfan Alimohammadi

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## Research Interests

- Computer Vision
- Deep Learning
- Algorithm Design
- Computational Geometry

## Education

### KTH Royal Institute of Technology

Stockholm, Sweden

RESEARCH INTERN

2020

- Under supervision of Prof. Martin Monperrus

### Shahid Beheshti University

Tehran, Iran

B.SC. IN COMPUTER ENGINEERING

2015 - 2020

- Related courses: Introduction to Programming (20/20), Advanced Programming (20/20), Discrete Mathematics (19.75/20), Data Structures (20/20), Design and Analysis of Algorithms (19/20), Bachelor's Thesis Project (20/20)

### Allameh Helli High School

Tehran, Iran

DIPLOMA IN MATHEMATICS AND PHYSICS DISCIPLINE

2011 - 2015

- Affiliated with the [National Organization for the Development of Exceptional Talents \(NODET\)](#)

## Professional Experience

### Balad Maps

Tehran, Iran

DATA SCIENTIST

2020

- Balad is the most popular maps and navigation application in Iran, with a user-base of more than 4 million people.
- I was working on determining the possible locations of speed bumps and traffic lights of Tehran, by knowing users' GPS locations.
- I've done some computer visional tasks by using Variational Autoencoders in PyTorch, graphs, geometric data structures, etc.
- I was a software engineer interviewer, to help Balad in hiring new people.

### Cafe Bazaar

Tehran, Iran

SOFTWARE ENGINEER

2016 - 2018

- Cafe Bazaar is the most popular and successful Android application store in Iran, with a user-base of more than 40 million people.
- I was a member of App Discovery team and Inline Apps team.
- I was a software engineer interviewer, to help Cafe Bazaar in hiring new people.
- I developed an admin panel for the executive team of Cafe Bazaar, using Python Django, HTML, CSS and Javascript.
- I was developing a platform for Android developers to create some Android apps which there is no installation needed for them.

## Researches

### Thatcher Illusion and Its Effects on the Face Recognition Problem

2020

- As a member of Shahid Beheshti University Computer Vision Group, I'm doing some researches on the face recognition problem.
- This project has been awarded as the best bachelor's thesis in the university.
- The paper is being prepared to be submitted on [Perception Journal](#), under supervision of [Prof. Ebrahimi Moghadam](#).
- A small part of its source code is available on [GitHub](#).

### Satellite Images Super Resolution

2020

- It was done for Balad Maps to create larger satellite images for Iran maps.
- I read different papers and implemented some different methods, and I compared them with a valid metric.

### Map Merging

2019

- This research was done under supervision of [Dr. Amin Gheibi](#) as a computational geometric problem.
- Our purpose was to merge two maps of a city by modeling them to graphs and polygons (using NumPy, Matplotlib, and NetworkX).
- I presented this research as a [guest speaker at the 21th ACM-ICPC Asia Tehran Regional Contest](#).

## Courses

- [Machine Learning by Stanford University](#)
- [CS231n: Convolutional Neural Networks for Visual Recognition](#)

# Teaching and Coaching Experience

## TEACHING ASSISTANTSHIP

<b>Computational Intelligence, Dr. Malek,</b>	Fall '20
<b>Design and Analysis of Algorithms, Dr. Ghavamizadeh,</b> Held some TA sessions. Determined and graded some computer assignments.	Spring '18, Fall '18, Spring '19
<b>Data Structures, Dr. Abin,</b> Held TA sessions. Determined and graded the course projects.	Fall '17, Spring '18, Fall '18, Spring '19
<b>Statistics and Probabilities, Dr. Safaei,</b>	Fall '18
<b>Data Structures, Dr. Ebrahimi Moghaddam,</b>	Fall '18
<b>Advanced Programming, Dr. Vahidi-Asl,</b> Held some TA sessions. Graded a computer assignment.	Spring '17
<b>Discrete Mathematics, Dr. Safaei,</b> Helped handling some TA sessions.	Spring '17
<b>Discrete Mathematics, Dr. Abdoos,</b> Helped handling some TA sessions.	Spring '17
<b>Introduction to Programming, Dr. Abdoos,</b> Held some TA sessions (with extra contents about Linux OS). Determined a computer assignment.	Fall '16

## OTHER

<b>Young Scholars Club,</b> Teaching to the medalist students of National Olympiad in Informatics	Fall 2020
<b>Shahid Beheshti University,</b> Coaching a team which got a <u>bronze medal</u> at ACM-ICPC Asia Tehran Regional Contest	Fall 2019
<b>University of Tehran ACM Chapter,</b> Teaching algorithm design and data structures	Fall 2018
<b>Allameh Helli High School,</b> preparing students for Iranian National Olympiad in Informatics	Summer 2015

# Honors and Awards

## ACM-ICPC AND IOI RELATED

2017	<b>Silver Medal,</b> <u>ACM-ICPC Asia Tehran Regional Contest</u>	Tehran, Iran
2017	<b>56th Rank,</b> <u>ACM-ICPC World Finals</u> (from among 133 teams chosen from a field of 46,381 contestants)	South Dakota, USA
2016	<b>1st Rank,</b> <u>ACM-ICPC Asia Lahore Regional Contest</u>	Lahore, Pakistan

## PROJECTS

2013	<b>The Best Project Award,</b> <u>Allame Helli High School Seminar</u> (for an AVR-programmed project)	Tehran, Iran
2011	<b>The Best Project Award,</b> <u>8th NODET Young Researchers Festival</u> (for "Persian Letters OCR" project)	Tehran, Iran

## OTHER

2020	<b>96th Rank,</b> The Nationwide Entrance exam of Iranian universities (from among 9000 graduated students)	Tehran, Iran
2019	<b>80th Rank,</b> <u>Huawei Neural Network Challenge</u> (an onsite competition among 124 selected universities)	Porto, Portugal
2018	<b>Completed All Levels,</b> <u>Google Foobar</u> (a secret challenge by Google, to examine your Java or Python skills)	

# Skills

**Technical:** Pascal, Delphi, C++, Python, Java, Git, Django, Docker, Ubuntu, Raspberry Pi, Adobe Photoshop  
**Languages:** Persian (mothertongue), English (upper-intermediate)

# Notable (Recent) Projects

<b>Fake Job Posting Detection</b>	2020
• Classifying job postings with deep learning (using PyTorch, Skorch, and scikit-learn basic NLP tools)	
<b>Commit Type Detection</b>	2020
• Classifying Git commits with deep learning (using PyTorch, and scikit-learn basic NLP tools)	
<b>Map Coloring</b>	2019
• Backtracking on graphs for coloring a map with four colors (using NumPy, Matplotlib and OpenCV)	

# Other Activities

## Problemsetting for International Algorithmic Contests

- CodeChef March Cook-Off 2019, HackerEarth March Circuits 2019, CodeChef March LunchTime 2019, Codeforces Round #261