Erfan Alimohammadi

Faculty of Computer Engineering, Shahid Beheshti University, Daneshjou Boulevard, Velenjak, Tehran, Iran

(+98) 919-30-39-381 | erfan.aa@gmail.com | me.palindrome.ir | erfaniaa | erfan-alimohammadi | erfan-alimohammadi

Research Interests

• Computer Vision   • Machine Learning   • Algorithm Design and Data Structures   • Computational Geometry

Education

KTH Royal Institute of Technology   *Stockholm, Sweden*
RESEARCH INTERN   *2020*
- Using machine learning algorithms for solving software problems, 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

Data Scientist   *Tehran, Iran*
BALAD MAPS   *2020*
- Balad is the most popular maps and navigation application in Iran, with a user-base of more than 4 million people.
- Determined the possible locations of speed bumps and traffic lights of Tehran, while storing users' GPS locations on big data servers.
- Used Variational Autoencoders in PyTorch, graphs, geometric data structures, etc. on real large datasets.
- Interviewed many people to help Balad in the hiring process.

Software Engineer   *Tehran, Iran*
CAFE BAZAAR   *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.
- A member of App Discovery team and Inline Apps team.
- Interviewed many people to help Cafe Bazaar in the hiring process.
- Developed an admin panel for the executive team of Cafe Bazaar, using Python Django, HTML, CSS and Javascript.
- Developed a platform for Android developers to create some Android apps which there is no installation needed for them.

Research Experience

Thatcher Illusion and Its Effects on the Face Recognition Problem   *2020*
- I'm a member of Shahid Beheshti University Computer Vision Group.
- 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*
- Was done for Balad Maps to create larger satellite images for Iran maps.
- I compared different methods on real large datasets, based on PSNR 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

Honors and Awards

ACM-ICPC and IOI related

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

Projects

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

Other

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

Teaching and Coaching Experience

Teaching Assistantship

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

Other

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

Skills

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

Notable (Recent) Projects

Fake Job Posting Detection *2020*
• Classifying job postings with deep learning (using PyTorch, Skorch, and scikit-learn basic NLP tools)

Commit Type Detection *2020*
• Classifying Git commits with deep learning (using PyTorch, and scikit-learn basic NLP tools)

Map Coloring *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