

# Mahsa Eftekhari

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🌐 mahsa-eftekhari

## EXPERIENCE

### Google

#### Software Engineering Intern

📅 June 2020 – Sept 2020 📍 Mountain View, CA

- Implement **data cleaning and verification pipeline** ( using python and REST API ) to address the messy datasets for **Google Knowledge Graph**. While an intern, I noticed and initiated an effort to also address the missing values in the existing data series used by the knowledge graph team. I designed and implemented this procedure from scratch ( using GO ) and provided the team with interfaces that fill the missing values of the data series.

### University of California, Davis

#### Simulation of Population Protocols

📅 Sept 2017 – Present 📍 Davis, CA

- I implemented ( Java ) simulations for a **distributed computing model**, population protocols, to study time and memory complexity of randomized real world physical systems. We implemented a dynamic network of agents and simulated the process of leader election, majority and size computation.

## PUBLICATIONS

- A Time and Space Optimal Stable Population Protocol Solving Exact Majority. David Doty, **Mahsa Eftekhari**, Leszek Gąsieniec, Eric Severson, Grzegorz Stachowiak, sPrzemysław Uznański.
  - Full paper appears In the 62nd Annual of IEEE Symposium on Foundations of Computer Science (**FOCS 2021**)
  - Brief announcement appears In the 40th ACM Symposium on Principles of Distributed Computing (**PODC 2021**)
- Message complexity of population protocols. Talley Amir, James Aspnes, David Doty, **Mahsa Eftekhari**, Eric Severson In the 34th International Symposium on Distributed Computing (**DISC 2020**)
- Efficient size estimation and impossibility of termination in uniform dense population protocols. David Doty, **Mahsa Eftekhari** In the 38th ACM Symposium on Principles of Distributed Computing (**PODC 2019**)
- Brief announcement: Exact size counting in uniform population protocols in nearly logarithmic time. David Doty, **Mahsa Eftekhari**, Othon Michail, Paul G. Spirakis, Michail Theofilatos. In the 32nd International Symposium on Distributed Computing (**DISC 2018**)
- A survey of size counting in population protocols. David Doty, **Mahsa Eftekhari**. arXiv preprint arXiv:2105.05408 (2021)

## AWARDS AND FELLOWSHIPS

- UC Davis GGCS Richard Walters scholarship Summer 2021
- GHC scholarship Summer 2020
- CRA-W scholarship Spring 2019
- UC Davis graduate fellowship Fall 2017
- Ranked 15<sup>th</sup>, 2015  
National Scientific Olympiad in Computer Engineering
- Ranked 3<sup>rd</sup> (amongst more than 5000 students) , 2015  
National Graduate Entrance Exam in Computer Science.
- Ranked 15<sup>th</sup> (amongst more than 18000 students), 2015  
National Graduate Entrance Exam in Software Engineering.

## EDUCATION

### Ph.D. in Computer Science

University of California, Davis

GPA: 3.95/4.0

#### Distributed Computing Algorithms

📅 2017 – 2022

### M.Sc. in Computer Engineering

Sharif University of Technology

GPA: 4.0/4.0

#### Algorithms and Computation

📅 2015 – 2017

### B.Sc. in Computer Science

Sharif University of Technology

Ranked 7th in class

📅 2010 – 2015

## SKILLS

Programming and Libraries:

Java, Object-oriented programming

Python, Pandas, Numpy

Octave, C++

Git, SQL, LaTeX

Other:

Algorithm Design and Analysis

Distributed computing

Probability, Combinatorics, and Graph

Software Design, Data visualization

## PROJECTS

- Implementation and Maintenance of autograd-ing homeworks (Python, Github) Spring 2020
- Design and analysis of online allocation algorithm (Masters Thesis) 2016-2017
- Designing an **App Review Miner** to Extract Information from user reviews Fall 2016
- Implementation of K-means algorithm to cluster psychological data Spring 2014
- Java Implementation of a P2P file transfer software Spring 2011
- Java Implementation of a 2-Player Chess board game Fall 2010

## COURSES

Machine Learning	(In Progress)
Advanced Algorithms	(4.0 / 4.0)
Data Structure	(4.0 / 4.0)
Approximation Algorithm	(4.0 / 4.0)
Linear Algebra	(4.0 / 4.0)
Big Data Algorithms	(4.0 / 4.0)
Algorithmic Game Theory	(4.0 / 4.0)