Mahsa **Eftekhari**

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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

Design, analysis, and simulation of distributed computing algorithms

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

- Dynamic size counting in population protocols. Doty, Eftekhari. In the 1st Symposium on Algorithmic Foundations of Dynamic Networks **(SAND 2022)**
- A Time and Space Optimal Stable Population Protocol Solving Exact Majority. Doty, Eftekhari, Gąsieniec, Severson, Stachowiak, Uznański.
  - Full version appears In the 62nd Annual of IEEE Symposium on Foundations of Computer Science **(FOCS 2021)**
  - BA appears In the 40th ACM Symposium on Principles of Distributed Computing **(PODC 2021)**
- A survey of size counting in population protocols. Doty, Eftekhari. Theoretical Computer Science Journal **(TCS 2021)**
- Message complexity of population protocols. Amir, Aspnes, Doty, Eftekhari, Severson In the 34th International Symposium on Distributed Computing **(DISC 2020)**
- Efficient size estimation and impossibility of termination in uniform dense population protocols. Doty, Eftekhari
  In the 38th ACM Symposium on Principles of Distributed Computing **(PODC 2019)**
- BA: Exact size counting in uniform population protocols in nearly logarithmic time. Doty, Eftekhari, Michail, G. Spirakis, Theofilatos. In the 32nd International Symposium on Distributed Computing **(DISC 2018)**

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 15th, 2015
  National Scientific Olympiad in Computer Engineering
- Ranked 3rd (amongst more than 5000 students) , 2015
  National Graduate Entrance Exam in Computer Science.
- Ranked 15th (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
Go, 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 autograding 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

Intro to TensorFlow for Deep Learning	(WIP)
Machine Learning & Discovery	(WIP)
Intro to Machine Learning	(WIP)
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)