Mahsa Eftekhari Hesari

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Education

- **Ph.D. Student in Computer Science**, University of California, Davis (UC Davis) 2017–now

Supervisor: Prof. David Doty

GPA: 4.0/4.0

- **Master of Science (M.Sc.) in Software Engineering**, Sharif University of Technology 2015–2017

Supervisor: Prof. H. Zarrabi-Zadeh

GPA: 18.78/20, Ranked 3rd in class

- **Bachelor of Science (B.Sc.) in Computer Science**, Sharif University of Technology 2010–2015

GPA: 15.35/20, Ranked 7th in class

Research Experiences

- **Research Assistant:** Population Protocols, Distributed Computing Algorithms 2017-now
  - Presenting the First Sublinear Time Algorithms for the Size Counting Problem in Population Protocols
  - Composition of Protocols in Uniform Populations Protocols
- **Master Thesis:** Online Algorithms for Fair Allocation of Goods 2016-2017
  - Presenting an online allocation algorithm
  - Analyzing the competitive ratio of the presented algorithm
  - Proving a lower bound on the competitive ratio of any proposed algorithms for the problem
- Survey on Mechanism Design for Distributed Computing Fall 2015
- Survey on Truthful Incentives in Crowdsourcing Spring 2015

Publications

- Brief announcement: Exact size counting in uniform population protocols in nearly logarithmic time., *David Doty, Mahsa Eftekhari, Othon Michail, Paul G. Spirakis, and Michail Theofilatos. In the 32nd International Symposium on Distributed Computing, 2018.*
- Efficient size estimation and impossibility of termination in uniform dense population protocols., *David Doty, Mahsa Eftekhari. CoRR abs/1808.08913, 2018.*
- Simple and exact population size counting., *Mahsa Eftekhari. Technical report, 2018.*

Presentations

- Brief announcement: Exact size counting in uniform population protocols in nearly logarithmic time., *In the 32nd International Symposium on Distributed Computing (DISC).* Oct. 2018

Teaching Assistant

- **Theory of Computation (2 Quarters)** at UC Davis Spring 2018, Winter 2018

Leading lectures for two weeks, leading discussion classes, and holding office hours

- **Approximation Algorithms (Graduate Level Course)** at Sharif Spring 2017

Leading discussion classes and designing homeworks

- **Computational Geometry (Graduate Level Course)** at Sharif Fall 2016

Leading discussion classes and designing homeworks

◦ **Advanced Programming (2 Semesters)** at Sharif — Spring 2015, Spring 2014

Leading interactive Java programming labs and code debugging

◦ **Principles of Computer System** at Sharif — Spring 2015

Leading discussion classes

Awards and Honors

- UC Davis GGCS travel scholarship recipient to attend DISC 2018
- Graduate Fellowship at UC Davis ($ 59,334.0/year) — Fall 2017-now
- Ranked 15th, National Scientific Olympiad in Computer Engineering. — Summer 2015
- Ranked 3rd, National Graduate Entrance Exam in CS. (amongst more than 5000 students) — Spring 2015
- Ranked 15th, National Graduate Entrance Exam in Computer Engineering, Software Engineering, Algorithms and Computations. (amongst more than 18000 students) — Spring 2015

Technical Projects

- Conducting latency and power analysis using gem5 simulator: — Fall 2017
  - ◦ Cycle-accurate full-system simulations across different CPU models and cache configurations, under an extensive set of benchmarks
  - ◦ Required deep knowledge in `C++` and Python for modeling components and building our target system
- Designing an App Review Miner to Extract Information from User Reviews — Fall 2016
  - ◦ Phase 1: Survey on existing App-review miners — Team Project
  - ◦ Phase 2: Enhancement of two existing App-review miners by combining their approaches
  - ◦ Phase 3: Evaluation; comparing the results of our designed App-review miner with real user experiences
- Developing a Social Media Webpage — Spring 2015
  - ◦ Mastering HTML, CSS, and JavaScript for the front-end implementation — Team Project
  - ◦ Gaining skills in using GitHub commands
  - ◦ Utilizing Django platform for the back-end development
- Data Mining in Practice — Spring 2014
  - ◦ Clustering psychological data by implementing K-means algorithm
- Java Implementation of a P2P File Transfer Software — Spring 2011
- Java Implementation of a 2-Player Chess Board Game — Fall 2010

Selected Courses

◦ **Graduate Courses:** Advanced Algorithms (4.0/4.0), Randomized Algorithms (18/20), Approximation Algorithms (19.5/20), Massive Data Algorithms (19.5/20), Information Theory and Coding (18.2/20), Algorithmic Game Theory (18.1/20)

◦ **Undergraduate Courses:** Advanced Programming (18.6/20), Data Structures (18.7/20), Design and Analysis of Algorithms(19/20)

Leading Skills

- **President** of SEDAD, Graduate Student Association *at UC Davis* — 2018-2019
- **Member of board** of Student Scientific Association in Department of Mathematical Sciences, *Sharif University of Technology* — 2012-2013