Mahsa Eftekhari Hesari

Department of Computer Science, University of California, Davis

Email: mheftekhari@ucdavis.edu

Phone: +1 (530)761-6207

Summary

• Three years plus research on design and analysis of algorithms, distributed algorithms, randomized algorithms, approximation algorithms, and online algorithms

• Two years plus teaching experience of Java in advanced programming course

Education

◦ **Ph.D. Student in Computer Science**, University of California, Davis (UC Davis) 2017–now
(GPA: 4.0/4.0)

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

Technical Skills

Programming Language:	Java, C++, Python, Pascal
Web Design / Framework:	HTML, CSS, JavaScript, Ajax
Operating System:	Linux, Microsoft Windows
Other:	LaTeX, SQL

Technical Projects

• Conducting latency and power analysis using **gem5 simulator**: Fall 2017
  ◦ Cycle-accurate full-system simulations across different CPU models and cache configurations, using sets of benchmarks
  ◦ Required deep knowledge in C++ for modeling components, as well as proficiency in Python to build 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

Research Projects

◦ **Research Assistant:** Distributed Computing Algorithms, Population Protocols 2017-now
  • Presented the **First Sublinear Time Algorithms** for the Size Counting Problem in Population Protocols
  • Designing Composition Scheme of Protocols in Uniform Populations Protocols

◦ **Master Thesis:** Online Algorithms for Fair Allocation of Goods 2016-2017
  • **Designing** 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

◦ Research 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 office hours

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

Leading discussion classes and designing graduate level homeworks

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

Leading discussion classes and designing graduate level 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

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)

Awards and Honors

◦ **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 Eng., Algorithms and Computations. (amongst more than 18000 students)* — Spring 2015

Volunteer Experiences

• Member of **board** of SEDAD, Graduate Student Association, *University of California, Davis* 2018-2019

• Member of **board** of Student Scientific Association in Department of Mathematical Sciences, *Sharif University of Technology* 2012-2013