Seyed Majid Zahedi | CV

Systems Architecture Integration Laboratory
Duke University, D125 LSRC, 308 Research Drive – Durham, NC

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Research Interests

Datacenter Systems. Resource Management, Energy Efficiency, Simulation Methods

Economics and Computation. Algorithmic Game Theory, Multi-agent Systems

Computer Architecture. Allocation and Scheduling, Power and Performance Analysis

Education

Duke University
PhD in Computer Science 2012-2018

University of Tehran
MS in Software Engineering 2009-2012

University of Tehran
BS in Software Engineering 2005-2009

Experience

Duke University
Graduate Research Assistant, *Durham, NC* 2012-2018

Qualcomm
Research Intern, *Raleigh, NC* 2017

Institute for Research in Fundamental Sciences (IPM)
Research Assistant, *Tehran, Iran* 2011-2012

University of Tehran
Graduate Research Assistant, *Tehran, Iran* 2009-2011

Paper Awards

Best Paper Award, HPCA
Amdahl's Law in the Datacenter Era: A Market for Fair Processor Allocation 2018

Research Highlight, Communications of the ACM
The Computational Sprinting Game 2018

Top Picks Honorable Mention, IEEE Micro
The Computational Sprinting Game 2016

Best Paper Award, ASPLOS
The Computational Sprinting Game 2016

Top Picks, IEEE Micro
REF: Resource Elasticity Fairness with Sharing Incentives for Multiprocessors 2014

Academic Honors

Outstanding Ph.D. Preliminary Exam Award
CS Department, *Duke University* 2015

Duke University Graduate School Fellowship
CS Department, *Duke University* 2012

3rd in Graduating Class of MS in Computer Engineering
ECE Department, *University of Tehran* 2012

Exceptional Talents Admission to MS in Computer Engineering
ECE Department, *University of Tehran* 2009
University of Tehran offered MS program admission to the top 10% students in each major.

Excellent Student of Semester in Faculty of Engineering
ECE Department, *University of Tehran* 2009

Top 0.2% of Nearly 1,000,000 Participants
Iranian National University Entrance Exam 2005

Publications

Journals

Distributed Strategies for Computational Sprints
S. Fan*, S. M. Zahedi*, B. C. Lee (*Co-First Authors) CACM
Communications of the ACM, 2019 (Invited)
Research Highlight

Dynamic Proportional Sharing: A Game-Theoretic Approach
R. Freeman*, S. M. Zahedi*, V. Conitzer, B. C. Lee (*Co-First Authors) POMACS
Proc. of the ACM on Measurement and Analysis of Computing Systems, March 2018

Managing Heterogeneous Datacenters with Tokens
S. M. Zahedi, S. Fan, B. C. Lee TACO
ACM Transactions on Architecture and Code Optimization, May 2018

Computational Sprinting: Architecture, Dynamics, and Strategies
S. M. Zahedi, S. Fan, M. Faw, E. Cole, B. C. Lee TOCS
ACM Transactions on Computer Systems, January, 2017 (Invited)

Sharing Incentives and Fair Division for Multiprocessors
S. M. Zahedi, B. C. Lee IEEE Micro
IEEE Micro, May/June, 2015 (Invited)
Top Picks from Computer Architecture Conferences

Reliable Energy-aware App. Mapping & V-F Island Partitioning for GALS-based NoC
A. Mahabadi, S. M. Zahedi, A. Khonsari JCSS
Journal of Computer and System Sciences, June 2013

Conferences

Dynamic Proportional Sharing: A Game-Theoretic Approach SIGMETRICS
R. Freeman*, S. M. Zahedi*, V. Conitzer, B. C. Lee (*Co-First Authors)
Int'l. Conf. on Measurement & Modeling of Comp. Sys., Irvine, CA, June 2018

Amdahl's Law in the Datacenter Era: A Market for Fair Processor Allocation HPCA
S. M. Zahedi*, Q. Llull*, B. C. Lee (*Co-First Authors)
Int'l. Symp. on High Perf. Computer Architecture, Vienna, Austria, February 2018
Best Paper Award

Fair and Efficient Social Choice in Dynamic Settings IJCAI
R. Freeman, S. M. Zahedi, V. Conitzer
Int'l. Joint Conf. on Artificial Intelligence, Melbourne, Australia, August 2017

Cooper: Task Colocation with Cooperative Games HPCA
Q. Llull, S. Fan, S. M. Zahedi, B. C. Lee
Int'l. Symp. on High Perf. Computer Architecture, Austin, TX, February 2017

The Computational Sprinting Game ASPLOS
S. Fan*, S. M. Zahedi*, B. C. Lee (*Co-First Authors)
Int'l. Conf. on Architectural Support for Prog. Lang. & Op. Sys., Atlanta, GA, April 2016
Best Paper Award, CACM Research Highlight, IEEE Micro Top Picks Honorable Mention

REF: Resource Elasticity Fairness with Sharing Incentives for Multiprocessors ASPLOS
S. M. Zahedi, B. C. Lee
Int'l. Conf. on Architectural Support for Prog. Lang. & Op. Sys., Salt Lake City, UT, March 2014
IEEE Micro Top Picks

Dissertation

Managing Shared Resources in the Data Center Era PhD Thesis
S. M. Zahedi
Duke University, March 2018

Talks

Dynamic Proportional Sharing: A Game-Theoretic Approach June 2018
SIGMETRICS, *Irvine, CA*

Data Center Resource Management: Computer Architecture Meets Game Theory March 2018
UWaterloo (ECE), UPenn (CIS), UMass Amherst (ECE), UBC (ECE)

Amdahl's Law in the Datacenter Era: A Market for Fair Processor Allocation February 2018
HPCA, *Vienna, Austria*

The Computational Sprinting Game April 2016
ASPLOS, *Atlanta, GA*

REF: Resource Elasticity Fairness with Sharing Incentives for Multiprocessors March 2014
ASPLOS, *Salt Lake City, UT*

Teaching

Duke University
Teaching Assistant

- Algorithm Design (Spring 2014)
- Computer Architecture (Spring 2013)

Tutorials
Presenter and Co-organizer
- Datacenter Simulation Methodologies (MICRO'14), (ISPASS'15), and (ISCA'15)
  With Benjamin C. Lee, Qiuyun Llull, and Tamara Silbergleit Lehman

University of Tehran
Teaching Assistant
- Computer Network Simulation (Spring 2011)
- Advanced Computer Networks Design (Fall 2010)
- Programming Language Design (Fall 2009 and 2010)
- Computer Networks (Fall 2010 and 2011)
- Performance Evaluation of Computer Networks (Spring 2010 and 2011)
- Database Systems (Spring 2009)

Iranian National Organization for Development of Exceptional Talents
High School Computer Teacher, *Tehran, Iran* 2011-2012

Ehsan Private School
Middle School Geometry Teacher, *Tehran, Iran* 2007-2011

Service

Journal Reviews (each listed only once)

ACM Trans. on Architecture and Code Optimization (TACO)

ACM Trans. on Modeling & Perf. Eval. of Comp. Sys. (ToMPECS)

Cluster Computing: The Journal of Networks, Software Tools & App.

IEEE Access

IEEE Communications Letters (CL)

IEEE Trans. on Cloud Computing (TCC)

IEEE Trans. on Parallel and Distributed Sys. (TPDS)

Journal of Parallel and Distributed Computing (JPDC)

External Review Committees (each listed only once)

Int'l. Conf. on Architectural Support for Prog. Lang. & Op. Sys. (ASPLOS)