Mohammad Hasanzadeh Mofrad (m.hasanzadeh.mofrad@gmail.com)

Curriculum Vitae (http://www.cs.pitt.edu/~moh18)

RESEARCH INTERESTS

• Distributed systems, HPC and Cloud • Distributed Sparse Data Structures and Algorithms • Graph analytics • Deep Learning • Reinforcement learning

EDUCATION

2015 – Expected 2020 — **PhD Student** (GPA 3.73)
Computer Science Department, University of Pittsburgh
Thesis: *Distributed Sparse Computing & Communication*

2010–2013 — **MEng in Artificial Intelligence** (GPA 3.70)
CEIT Department, Amirkabir University of Technology
Thesis: *Grid resource discovery using learning automata*

2004–2009 — **BEng Computer Engineering** (GPA 3.50)
Engineering School, Payame Noor University (PNU)
Thesis: *Design and implement a workgroup network*

INDUSTRY EXPERIENCE

2014–2015 — **ICT Research Institute of Academic Center for Education, Culture and Research (ACECR)** (http://www.acecr.ac.ir/)
Position: Software Engineer
Project: *2000 Telephony Payment Gateway* (http://www.2000.ir) – Worked on the VoIP payment gateway that handles up to 500 concurrent calls. IVR design, SIP endpoint load balancing, payment gateway routing, health monitoring and logging are features I added to this system.
Languages: Python, Perl, C/C++ and SQL
Technologies: VoIP, IVR design, virtualization, databases and web service integration

2012–2014 — **Research Center for Development of Advanced Technologies** (http://www.rcdat.ir/)
Position: Software Engineer
Project: *iPreez Unified Communication Platform* (http://www.ipreez.ir) – Worked on a unified communication platform capable of handling VoIP, Video, IM, SMS, Email, Fax and Text. I implemented interfaces for integrating different types of media protocols into this platform while preserving the interoperability of open standards.
Languages: Java, shell scripting, C++ scripting and PHP
Technologies: Configuring VoIP, Video conferencing, FoIP and ToIP servers, and cloud IaaS

PROFESSIONAL SKILLS

Languages	C/C++, Python, Java, Matlab and Shell scripting
Systems	Hadoop, Giraph, ESXi, Xen and OpenStack
Libraries	MPI, Pthread, OpenMP, NUMActl, CUDA, and SGX

TEACHING EXPERIENCE

2015–2018 — **Teaching Assistant**
Computer Science Department, University of Pittsburgh

Operating system, compiler design, systems software, Java programming and discrete math.

CURRENT PROJECTS

- *Design and Implementation of distributed sparse data structures and algorithms*: Developed the new Triply Compressed Sparse Column (TCSC) format for Sparse Matrix – Sparse input and output Vectors ($SpMSpV^2$) primitive (C/C++).
- Distributed graph analytics on HPC clusters for big graphs (C/C++).
- Multithreaded sparse deep neural network training for large-scale neural networks (C/C++).
- Design and implementation of new parallelism models for distributed systems suitable for sparse big data (C/C++).

SELECTED PUBLICATIONS

(https://scholar.google.com/citations?user=0Ldnd8MAAAAJ&hl=en)

- **Mohammad Hasanzadeh Mofrad**, Rami Melhem, Yousuf Ahmad and Mohammad Hammoud. "Efficient Distributed Graph Analytics using Triply Compressed Sparse Format," In proceedings of IEEE Cluster, Albuquerque, USA, 2019.
- **Mohammad Hasanzadeh Mofrad**, Rami Melhem, Yousuf Ahmad and Mohammad Hammoud. "Multithreaded Layer-wise Training of Sparse Deep Neural Networks using Compressed Sparse Column," In proceedings of IEEE High Performance Extreme Computing (HPEC), Waltham, USA, 2019.
- **Mohammad Hasanzadeh Mofrad**, Rami Melhem and Mohammad Hammoud. "Revolver: Vertex-centric Graph Partitioning Using Reinforcement Learning." In proceedings of IEEE International Conference on Cloud Computing (CLOUD), San Francisco, USA, 2018.

ACADEMIC SERVICES

Conference Session Co-chair
IOT 2018

Journal Guest Editor
JOPTI 2017

Conference Reviewer
IEEE HOT Interconnect 2019

Journal Reviewer

2019	2018	2017	2016
ACCESS, SUPE (2)	SUPE, JMES	JOCS, GENO	JCNC
2015	2014	2013	
SOCO	ISCEE, ISI	GENO	

HONORS & AWARDS

Spring 2019 — **Conference Travel Grant** ($400)
Graduate & Professional Student Government (GPSG), University of Pittsburgh

Summer, Fall 2018 — **Conference Travel Grant** ($600)
Computer Science Department, University of Pittsburgh

Spring 2017 — **Graduate Research/Poster Award** ($250/$250)
Computer Science Department, University of Pittsburgh

Spring 2016 — **Arts & Sciences Graduate Fellow**
Computer Science Department, University of Pittsburgh

VOLUNTARY EXPERIENCE

2017 – 2018 — **Vice President of Iranian Student Association (ISA)**
(https://www.facebook.com/ISAPittsburgh/)
University of Pittsburgh

MEMBERSHIPS

2011 – Present — IEEE Computer Society