APOORVE MOHAN

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RESEARCH INTEREST

Broadly, I am interested in **Systems and Networking**. My current research revolves around mitigating bare metal resource inefficiency in Cloud/HPC data centers.

EDUCATION

Northeastern University
- Ph.D. Computer Engineering *(Advisor: Prof. Gene Cooperman)*   *2014 - Present*

University of Delhi
- M.Sc. Computer Science   *2009 - 2011*
- B.Sc. (Hons.) Computer Science   *2006 - 2009*

WORK EXPERIENCE

Research Student   *2015 - Present*
Massachusetts Open Cloud, Boston
Advisors: Prof. Orran Krieger, Prof. Peter Desnoyers, Dr. Ata Turk
- Projects: Elastic secure infrastructure, Non-intrusive bare-metal introspection

Research Assistant   *2014 - Present*
Khoury College of Computer Sciences, Northeastern University, Boston
Advisor: Prof. Gene Cooperman
- Project: Efficient batch processing using user-space checkpoint-restart

Summer Research Intern   *2017, 2018*
IBM Research T.J. Watson, Yorktown Heights
Mentor: Dr. Gheroghe Almasi
- Projects: Dynamic partitioning of data centers at the bare-metal layer,
Analyzing system bottlenecks for distributed DNN training in commodity data centers

Teaching Assistant (Fall)   *2016*
Khoury College of Computer Science, Northeastern University, Boston
- CS 5600 Computer Systems *(Graduate)*
- CS 3650 Computer Systems *(Undergraduate)*

Project Associate, Indian Institute of Technology, Delhi   *2012 - 2014*
Advisors: Prof. Huzur Saran, Prof. Sorav Bansal
- Involved in design and development of an academic cloud *(https://baadal.nmeict.in)*

Guest Lecturer, Maharaja Agrasen College, University of Delhi   *2012 - 2013*
- C++, MIPS, and Shell Programming, and Computer Fundamentals *(Undergraduate)*

Software Developer, One97 Communications Ltd., NOIDA   *2011 - 2012*
- Java-based full-stack development

REFEREED PUBLICATIONS

- **A.Mohan**, S.Tikale, M.Abdi, M.H.Hajkazemi, G.Almasi, M.Silva, G.Cooperman, P.Desnoyers, O.Krieger, A.Turk, Improving Resource Efficiency in Consolidated Data Centers   **(In Progress)**

- **A.Mohan**, R.Garg, D.Tiwari, G.Cooperman, Improved Batch Processing in the Cloud by Mitigating Resource Congestion on Multi-Core Systems   **(In Progress)**

- A.Mossayebzadeh, **A.Mohan**, S.Tikale, A.Raza, N.Schear, T.Hudson, C.Munson, L.Rudolph, G.Cooperman, P.Desnoyers, O.Krieger, Tenant Controlled Security for Bare-Metal Clouds   **(Under Review)**

- **A.Mohan**, S.Nadgowda, B.Pipaliya, S.Varma, S.Suneja, C.Isci, G.Cooperman, P.Desnoyers, O.Krieger, A.Turk, NiBi: Non-Intrusive Bare-Metal Introspection   **(Under Review)**

- R.Garg, **A.Mohan**, M.Sullivan, G.Cooperman, CRUM: Checkpoint-Restart Support for CUDA's Unified Memory   **(IEEE Cluster 2018)**

- A.Mossayebzadeh, G.Ravago, **A.Mohan**, A.Raza, S.Tikale, N.Schear, T.Hudson, J.Hennessey, N.Ansari, K.Hogan, C.Munson, L.Rudolph, G.Cooperman, P.Desnoyers, O.Krieger, A Secure Cloud with Minimal Provider Trust   **(USENIX HotCloud 2018)**

- **A.Mohan**, A.Turk, R.S.Gudimetla, S.Tikale, J.Hennessey, U.Kaynar, G.Cooperman, P.Desnoyers, O.Krieger, M2: Malleable Metal as a Service   **(IEEE IC2E 2018)**

TECHNICAL EXPOSURE

Programming and Scripting: Python, C/C++, Bash, Java
Parallel and Cluster Computing: pthreads, OpenMP, OpenMPI, CUDA, SLURM
System Profiling: perf, sysstat, tcpdump, fio, strace, ptrace, gdb
Cloud and Virtualization: OpenStack, KVM, QEMU, libvirt
Deep Learning: Caffe, Alexnet, Imagenet
Databases: MySQL, SQLite, PostgreSQL
Storage: Ceph, Software iSCSI (TGT/IET), RAID
Web: JavaScript, HTML, Web2py, CSS, JQuery, REST

TALKS AND POSTERS

- Agentless Bare-Metal Introspection   **(MassOpenCloud Annual Workshop 2018)**

- Recycling Lost CPU Cycles   **(New England Network and Systems Day 2017)**

- Marrying Cloud and HPC for Long-Term Happiness   **(IBM Research Workshop 2017)**

- Elastic OpenStack Deployments   **(OpenStack Summit-Boston 2017)**

- Bare Metal Imaging   **(MassOpenCloud Annual Workshop 2016)**

- Marrying Cloud and HPC for Long-Term Happiness   **(Supercomputing Conference 2016)**