Mohan Kumar Kumar

10109 Ridgeway Dr,
Cupertino,
California CA 95014

Research Scientist
Facebook Reality Labs (FRL)

(404) 312-8995
mohan.cbein@gmail.com
https://mohankku.github.io/

Education

Georgia Institute of Technology	Ph.D. in Computer Science Specialization: Systems Thesis: Taming Latency In Data Center Applications Advisor: Dr. Taesoo Kim	Atlanta, GA
Georgia Institute of Technology	Masters in Computer Science Specialization: Systems	Atlanta, GA
University of Madras	B.E in Computer Science	Chennai, India

Current Job

I am a research scientist in Facebook Reality Labs (FRL). I work on running machine learning models on low power accelerators on AR/VR devices.

Conference and journal publications

1. **ECOTLB: Eventually Consistent TLBs**
   Steffen Maass*, **Mohan Kumar***, Taesoo Kim, Tushar Krishna, and Abhishek Bhattacharjee.
   In *ACM Transactions on Architecture and Code Optimization (TACO 2020),*

2. **SOLROS : A Data-Centric Operating System Architecture for Heterogeneous Computing**
   Changwoo Min, Woon-Hak Kang, **Mohan Kumar**, Sanidhya Kashyap, Steffen Maass, Heeseung Jo, and Taesoo Kim.
   In *Proceedings of the 13th ACM European Conference on Computer Systems (EuroSys 2018),*
   Porto, Portugal, April, 2018.

3. **LATR: Lazy Translation Coherence**
   Mohan Kumar*, Steffen Maass*, Sanidhya Kashyap, Jan Vesely, Zi Yan, Taesoo Kim, Abhishek Bhattacharjee, and Tushar Krishna.
   In *proceedings of the 23rd ACM International Conference on Architectural Support for Programming Languages and Operating Systems (ASPLOS 2018),*
   Williamsburg, VA, USA, March, 2018.

4. **Mosaic: Processing a Trillion-Edge Graph on a Single Machine.**
   Steffen Maass, Changwoo Min, Sanidhya Kashyap, Woonhak Kang, **Mohan Kumar**, and Taesoo Kim.
   In *Proceedings of the 12st ACM European Conference on Computer Systems (EuroSys 2017),*
   Belgrade, Serbia, April, 2017.
   Best student paper

5. **TCP Ordo: The cost of ordered processing in TCP Servers**
   Mohan kumar and Ada Gavrilovska.
   In *Proceedings of the IEEE International Conference on Computer Communications (INFOCOM 2016),*
   San Fransico, CA, April 2016.

6. **S-NFV: Securing NFV states by using SGX.**
Ming-Wei Shih, **Mohan Kumar**, Taesoo Kim, and Ada Gavrilovska.
In *Proceedings of the ACM International Workshop on Security in SDN and NFV (SDN-NFV Security 2016),*
New Orleans, LA, March, 2016.
Best paper and published in NFV congress

Posters

1. **mKPAC: Kernel Packet Processing for Manycore Systems**
Ramneek, **Mohan Kumar**, Taesoo Kim, and Sungin Jung.
In *Proceedings of the 19th International Middleware Conference (Middleware'18) Poster*
Rennes, France, December, 2018.

2. **Network Function Fault Isolation in a Single Address Space**
Mohan Kumar, Steffen Maass, and Taesoo Kim.
In *the 14th USENIX Symposium on Networked Systems Design and Implementation (NSDI'17) Poster*
Boston, MA, April, 2017.

3. **DistCoz: Tell Me What to Optimize in My Distributed Application**
Steffen Maass, **Mohan Kumar**, and Taesoo Kim.
In *the 14th USENIX Symposium on Networked Systems Design and Implementation (NSDI'17) Poster*
Boston, MA, April, 2017.

4. **VNFStore: NFV State Externalizing Framework**
Mohan Kumar and Ada Gavrilovska.
In *Diversity Workshop at SOSP'15*, Monterey, CA, October, 2015.

Awards

Eurosys'17	Best student paper award	04/2017
SDN-NFV'16	Best paper award	03/2016

Opensource Contributions

Zephyr	Contributions to the Zephyr protocol stack	2022
SLiRP	Bug fix to the SLiRP IPv6 module	2021

Travel Grants

1. **25th ACM Symposium on Operating Systems Principles**
Monterey, CA 10/2015

2. **Diversity Workshop at SOSP'15**
Monterey, CA 10/2015

3. **14th USENIX Symposium on Networked Systems Design and Implementation**
Boston, MA 03/2017

Invited Talks and Presentations

Infocomm'14	TCP Ordo: The cost of ordered processing in TCP Servers	04/2016
ASPLOS'18	LATR: Lazy Translation Coherence	03/2018

Work Experience

Research scientist	Facebook Reality Labs (FRL), Burlingame, CA Working in Facebook Reality Labs (FRL) on hardware (SIMD processors) acceleration of machine learning operators needed for AR/VR devices.	06/2022–
Research scientist	Facebook Reality Labs (FRL), Menlo Park, CA Working in Facebook Reality Labs (FRL) on a microkernel operating system.	07/2019–05/2022
Software engineering intern	Facebook, Menlo Park, CA Worked on Facebook data center's network system software using eBPF and XDP	05/2018–08/2018
Research Intern	AT&T Labs, Bedminster, NJ Worked on improving OS per core packet processing performance for software switching	06/2016–08/2016
Research Intern	HP Labs, Palo Alto, CA Worked on communication software framework for next generation data centers	05/2015–08/2015
Research Assistant	Georgia Tech, Atlanta, Ga Research in the CERCS under Dr. Ada Gavrilovska and Systems Software & Security Lab under Dr. Taesoo Kim.	05/2014–05/2019
Senior Software Engineer	Cisco Mobile Internet Technology Group, Bangalore, India Worked on the software stack design and development for 4G telecommunication nodes such as Packet Data Network Gateway(PGW) and Serving Gateway(SGW)	08/2010–05/2014

Teaching Experience

Teaching Assistant	Georgia Tech, Atlanta, Ga Teaching assistant for Advanced Operating Systems(AOS) during Spring 2016	01/2016–05/2016
Teaching Assistant	Georgia Tech, Atlanta, Ga Teaching assistant for Advanced Operating Systems(AOS) during Spring 2018	01/2018–05/2018

Professional Service

Program Committee	USENIX ATC 2020

Work Authorization

US permanent resident as outstanding researcher.