

# Jayashree Mohan

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## EDUCATION

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<b>The University of Texas at Austin</b> Ph.D. in Computer Science (GPA : 3.89) Advisor: Prof. Vijay Chidambaram	<b>2016 - Present</b> <i>Exp graduation : 2021</i>
<b>The University of Texas at Austin</b> MS in Computer Science (GPA : 3.89)	<b>2016 - 2020</b>
<b>National Institute of Technology Karnataka</b> B.Tech in Computer Engineering (CGPA : 9.87/10) Department Topper and Gold Medalist	<b>2012 - 2016</b>

## AREAS OF INTEREST

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File and storage systems, Systems infrastructure for Machine Learning

## WORK EXPERIENCE

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MICROSOFT RESEARCH REDMOND	<b>Investigating storage bottlenecks in deep learning</b> <i>Intern with Amar Phanishayee</i>	May-Aug 2020 May-Aug 2019
MICROSOFT RESEARCH CAMBRIDGE, UK	<b>Exploring the design space of the write head in Project Silica</b> <i>Intern with Andromachi Chatzieleftheriou, Richard Black, Ant Rowstron</i>	June-Aug 2018
MICROSOFT RESEARCH BANGALORE	<b>Imparting semantic knowledge to a distributed storage system</b> <i>Intern with Muthian Sivathanu</i>	May-Aug 2017

## HONORS & AWARDS

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UT Austin Graduate Dean's Prestigious Fellowship Supplement	2020
Microsoft Research PhD Fellowship	2019-2021
UT Austin Graduate Dean's Prestigious Fellowship Supplement	2019
Best Poster Award at ApSys'17	2017
Department Gold Medalist, NITK	2016
Viterbi-India Research Fellowship	2015
IIT Delhi Summer Research Fellowship	2014
Ministry of Human Resource Development(MHRD India) Scholarship	2012-2015

## CONFERENCE PUBLICATIONS

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- [1] **Jayashree Mohan**, Amar Phanishayee, and Vijay Chidambaram. CheckFreq: Frequent, Fine-Grained DNN Checkpointing. In 19th USENIX Conference on File and Storage Technologies, pp. 203-216. 2021. **(FAST 2021)**
- [2] **Jayashree Mohan**, Amar Phanishayee, Ashish Raniwala, and Vijay Chidambaram. Analyzing and Mitigating Data Stalls in DNN Training. In Proceedings of the VLDB Endowment, Vol. 14, No. 5, pp. 771-784. **(VLDB 2021)**
- [3] Aashaka Shah, Chao-Yuan Wu, **Jayashree Mohan**, Vijay Chidambaram, and Philipp Kraehenbuehl. Memory Optimization for Deep Networks. In International Conference on Learning Representations, 2021. **(ICLR 2021)**
- [4] Se Kwon Lee, **Jayashree Mohan**, Sanidhya Kashyap, Taesoo Kim, and Vijay Chidambaram. Recipe: Converting Concurrent DRAM Indexes to Persistent-Memory Indexes. In Proceedings of the 27th ACM Symposium on Operating Systems Principles, pp. 462-477. ACM, 2019. **(SOSP 2019)**

- [5] Muthian Sivathanu, Midhul Vuppalapati, Bhargav Gulavani, Kaushik Rajan, Jyoti Leeka, **Jayashree Mohan** and Piyus Kedia, Instalytics: Cluster Filesystem Co-design for Big-data Analytics. In 17th USENIX Conference on File and Storage Technologies (FAST 19), pp. 235-248. 2019. (FAST 2019)
- [6] **Jayashree Mohan**, Ashlie Martinez, Soujanya Ponnappalli, Pandian Raju and Vijay Chidambaram, Finding Crash-Consistency Bugs with Bounded Black-Box Crash Testing. In 13th USENIX Symposium on Operating Systems Design and Implementation (OSDI 18), pp. 33-50. 2018. (OSDI 2018)
- [7] **Jayashree Mohan**, Angad Vittal, K Chandrasekaran, & Bhaskar Krishnamachari, A Reinforcement Learning Approach to Optimize Downloads Over Mobile Networks. In 9th International IEEE Conference on Communication Systems and Networks (COMSNETS), 2017. (COMSNETS 2017)
- [8] Amber Bhargava, Timothy Ferrell, Alex Jones, Leo Linsky, **Jayashree Mohan**, and Bhaskar Krishnamachari, Optimizing Single-Phase Downloads over Random Duration Links in Mobile Networks. 25th International Conference on Computer Communication and Networks, August 2016. (ICCCN 2016)
- [9] **Jayashree Mohan**, Shruthi Puranik, and K Chandrasekaran, Reducing DNS Cache Poisoning Attacks. In Second International Conference on Advanced Computing and Communication Systems (ICACCS). IEEE, 2015. (ICACCS 2015) **Best Paper Award**

## WORKSHOP PUBLICATIONS

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- [1] **Jayashree Mohan**, Melissa Wasserman, and Vijay Chidambaram. Analyzing GDPR compliance through the lens of privacy policy. Heterogeneous Data Management, Polystores, and Analytics for Healthcare. Springer, Cham, 2019. 82-95. (VLDB Poly 2019)
- [2] **Jayashree Mohan**, Dhathri Purohith, Mathew Halpern, Vijay Chidambaram and Vijay Janapa Reddi, Storage on Your SmartPhone Uses More Energy Than You Think. In 9th USENIX Workshop on Hot Topics in Storage and File Systems (HotStorage 2017)
- [3] Dhathri Purohith, **Jayashree Mohan**, Vijay Chidambaram, The Dangers and Complexities of Benchmarking SQLite. Proceedings of the 8th ACM SIGOPS Asia-Pacific Workshop on Systems. ACM, 2017. (ApSys 2017)

## JOURNAL PUBLICATIONS

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- [1] Muthian Sivathanu, Midhul Vuppalapati, Bhargav S. Gulavani, Kaushik Rajan, Jyoti Leeka, **Jayashree Mohan**, Piyus Kedia. INSTalytics: Cluster Filesystem Co-design for Big-data Analytics. ACM Transactions on Storage (TOS) 15(4): 23:1-23:30 (2020) (TOS 2020)
- [2] **Jayashree Mohan**, Ashlie Martinez, Soujanya Ponnappalli, Pandian Raju, and Vijay Chidambaram. CrashMonkey and ACE: Systematically Testing File-System Crash Consistency. ACM Transactions on Storage (TOS) 15(2): 14:1-14:34 (2019) (TOS 2019)

## PREPRINTS/ POSTERS

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- [1] **Jayashree Mohan**, Rohan Kadekodi and Vijay Chidambaram, Analyzing IO Amplification in Linux File Systems. arXiv preprint arXiv:1707.08514 (ArXiv 2017),(Poster at ApSys 2017) **Best Poster Award**

## TEACHING EXPERIENCE

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- CS439: Principles of Computer Systems Teaching Assistant (UT Austin, Fall 2016)

## PROFESSIONAL ACTIVITIES

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- Journal of Systems Research (JSys), Student Editorial Board JSys 2021
- ACM Transactions on Computer Systems, Reviewer TOCS 2020
- External Reviewer NSDI 2019
- Shadow PC Eurosys 2018, 2019

## INVITED TECHNICAL TALKS

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- CheckFreq : Frequent, Fine-Grained DNN Checkpointing
  - University of Michigan Systems Seminar, March 2021
  - FAST, Feb 2021
- Systematically Testing File-System Crash Consistency Heisenbug Conference, Dec 2019
- Mitigating Data Stalls in DNN Training Microsoft Research Redmond, Aug 2019
- GDPR Dark Patterns Poly, Aug 2019
- Bounded Black-Box Crash Testing using CrashMonkey & Ace
  - Arm Research Summit, Sep 2019
  - Texas Systems Research Symposium, April 2019
  - Linux Storage and Filesystems Conference (Vault), Feb 2019
  - Chameleon User Meeting, Feb 2019
  - OSDI, Oct 2018
  - Microsoft Research Cambridge, July 2018
- Project Silica: Write Head Modelling Microsoft Research Cambridge, Aug 2018
- The Dangers and Complexities of SQLite Benchmarking APSys, Sep 2017
- Imparting Semantic Knowledge to a Distributed Storage System Microsoft Research Bangalore, Aug 2017

## GRANTS

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- Travel grants for SOSP'19, FAST'19, OSDI'18, SOSP'17, GHC'17, APSys'17