

# Sharath Chandrashekhara

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**Computer Science Ph.D. Candidate** with research interests in *mobile-systems*, *cloud-storage*, and *flash-based storage*; 4-years of relevant industrial experience in software research & development. Looking for exciting job opportunities in systems research, starting August 2018.

## Education

**Ph.D.** **Aug '14 – Present**

I am a fourth-year Ph.D. student in the Department of Computer Science and Engineering, University at Buffalo. I work in the **Reliable Mobile Systems Lab**, where I am currently focusing on developing personalized storage for mobile platforms. My dissertation will be titled **“Flexible data management on mobile systems”**, jointly advised by *Dr. Steve Ko* and *Dr. Karthik Dantu*.

**Master of Science, Computer Science** **Aug '12 – Sept '14**

University at Buffalo, with a specialization in ‘*Networked-Systems*’.

**Bachelor of Engineering, Electrical and Electronics** **Oct '05 – July '09**

Sri Jayachamarajendra College of Engineering (Visvesvaraya Technological University), Mysore, India.

## Research Overview

Broadly, my research interest lies in systems. Over the course of my Ph.D., I have focused on mobile systems, storage, and the intersection of two.

- **BlueMountain** is a framework for flexible and personalized storage on mobile systems and aims to provide higher control to users over their data. This is my proposed dissertation topic and I am currently exploring additional ways of improving data management on mobile systems.
- **Cider** is a highly flexible and scalable virtual block device, supporting temporally variable data redundancy. It uses erasure coding and works as a distributed block data store (design patent pending). Our planned future work is to fully develop a distributed flash-based arrays with Cider.
- **Pixelsior** is a photo management framework which can manage the photos on a mobile device and can transparently manage content adaptation and image manipulation.
- **Pigout** is a system that enables federated data processing over multiple Hadoop clusters.

## Publications

- [1] “BlueMountain: An Architecture for Customized Data Management on Mobile Systems.”  
**Chandrashekhara, S., Ki, T., Jeon, K., Dantu, K., & Ko, S. Y.**, 23<sup>rd</sup> Annual International Conference on Mobile Computing and Networking (MobiCom) 2017.  
CORE 2017: A\*. Runner-up of the ‘Best Video (teaser) Award’.
- [2] “Cider: A Case for Block Level Variable Redundancy on a Distributed Flash Array.”  
**Chandrashekhara, S., Kumar, M. R., Venkataramaiah, M., & Choudhary, V.**, 26<sup>th</sup> International Conference on Computer Communications and Networks (ICCCN) 2017 (Invited track).

- [3] “Pixelsior: Photo Management as a Platform Service for Mobile Apps.”  
Jeon, K., **Chandrashekhara, S.**, Dantu, K., & Ko, S. Y., 8<sup>th</sup> *USENIX Workshop on Hot Topics in Storage and File Systems (HotStorage)* 2016.
- [4] “Enabling automated, rich, and versatile data management for Android apps with BlueMountain.”  
**Chandrashekhara, S.**, Marcus, K., Subramanya, R. G., Karve, H. S., Dantu, K., & Ko, S. Y., 7<sup>th</sup> *USENIX Workshop on Hot Topics in Storage and File Systems (HotStorage)* 2015.
- [5] “Pigout: Making multiple Hadoop clusters work together.”  
Jeon, K., **Chandrashekhara, S.**, Shen, F., Mehra, S., Kennedy, O., & Ko, S. Y., 2014 *IEEE International Conference on Big Data*.

## Posters/Demos

- [1] “Demo: BlueMountain: An Architecture for Customized Data Management on Mobile Systems.”  
**Chandrashekhara, S.**, Ki, T., Jeon, K., Dantu, K., & Ko, S. Y., 15<sup>th</sup> *Annual International Conference on Mobile Systems, Applications, and Services (MobiSys)* 2017.
- [2] “Poster: Mobile Photo Data Management as a Platform Service”  
Jeon, K., **Chandrashekhara, S.**, Dantu, K., & Ko, S. Y., 15<sup>th</sup> *Annual International Conference on Mobile Systems, Applications, and Services (MobiSys)* 2017.

## Patents

“System and method for fault-tolerant block data storage” (patent pending).

**Chandrashekhara, S.**, Kumar, M. R., & Choudhary, V., *The Research Foundation For The State University Of New York*, Publication number: WO2015161140A1, Oct 22, 2015

## Teaching Experience

I have worked as a teaching assistant for six terms and given guest lectures in grad level courses.

- **Operating Systems:** Offered as CSE 421/521 by Dr. Tevfik Kosar—Fall 2014, 2015 and by Dr. Karthik Dantu—Fall 2017.
- **Distributed Systems:** Offered as CSE 486/586 by Dr. Steve Ko—Spring 2015, 2016 and 2017.

## Professional Experience

### SDE Summer Intern at Amazon Inc., Seattle

Summer ‘13, ‘14, ‘15

I worked in the database engines team of Amazon Web Services Redshift and developed system modules for low-level database backup and restore, data compression, and encryption.

### Software Developer at NetApp Inc., Bangalore

July ‘11 – July ‘12

I worked on developing various user and kernel space modules for enterprise storage controllers. Familiar with technologies like *SCSI*, *SAN*, *clustered storage* and other layers of the *storage stack*.

### Software Engineer at NDS Ltd. (now a part of Cisco), Bangalore

July ‘09 – July ‘11

I worked on the software development and integration of *Digital TV Set Top Box* middleware and device drivers. I also spent a brief stint working in the NDS R&D Labs of Paris, France.

## Technical Skill Set

- Passionate about systems research; have lead the design and development of two large research projects and effectively contributed to two others.
- Proficient in system level C/C++ programming; familiar with object-oriented programming in higher level languages like Java and Python, various software development and administrative tools in the Linux environment, platforms like Hadoop and Android, etc.
- Have a good understanding of the design complexities of large software systems and the associated software engineering challenges during all phases of the *software development life cycle*.

## Other Information

- **Service:** I was the ‘App Co-Chair’ of ACM MobiSys ’17 and helped to organize the conference in Niagara Falls.
- **Hobbies:** Homebrewer; GNU/Linux and programming enthusiast.
- **Status:** Visa: F1-Student; Citizenship: India.

References available on request. For further information, see my homepage or contact me.

December 10, 2017