Sharath Chandrashekhara

106 Davis, University at Buffalo, Amherst NY | sc296@buffalo.edu | http://cse.buffalo.edu/~sc296

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.

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'** and I am advised by **Dr. Steven Y. Ko**. I am currently focusing on developing personalized storage for mobile platforms for my Ph.D. dissertation titled *"Flexible Data Management on Mobile Systems"*.

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., 23rd 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., 26th International Conference on Computer Communications and Networks (ICCCN) 2017.*

[3] "Pixelsior: Photo Management as a Platform Service for Mobile Apps."
Jeon, K., ***Chandrashekhara, S.****, Dantu, K., & Ko, S. Y., 8th 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., 7th 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.*

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.

November 23, 2017