

Sheshadri K R

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EXPERIENCE

IISc Bangalore, Ph.D Scholar

Aug. 2018 – Present

Serverless Platforms

- Proposed and implemented a **Quality of Service (QoS) aware serverless platform** that performs resource efficient function deployments across Edge and Cloud resource layers.
- Designed a **Hybrid Serverless Platform** that deploys network functions across IaaS and FaaS services. Proposed a low-overhead serverless solution to process network workloads and a reactive scaling strategy that right-sizes IaaS/FaaS instances based on incoming workload.
- Proposed a novel fusion criteria RightFusion that performs **QoS aware function fusion** across Edge and Cloud resource layers. The fusion criterion is sensitive to resource heterogeneity and considers application characteristics and QoS requirements in its placement decisions.

Distributed Data Stores

- Designed and developed a reliable distributed data store called **ElfStore** for data management at the Edge-Fog layer
- Designed and developed a data store that performs replication and erasure coding based on a storage budget.

Ericsson India Global Services Pvt. Limited

Jun 2023 - Sep 2023

Research Intern

Bangalore, India

- Proposed and implemented a proof-of-concept data store for 5G Telco Edges.

Samsung R and D Institute - Bangalore (SRI-B)

Jun 2017 - Aug 2018

Senior Software Engineer

Bangalore, India

- Developed device plugin APIs and test cases for the SmartThings Android application.
- Generated datasets for different Samsung appliances using JSGF to train Samsung Bixby.

IIIT Hyderabad, Graduate Student

Aug. 2016 – Nov. 2016

Implementation of HBase with recovery (Advised by Dr. Vivekanand Vellanki)

Hyderabad, India

- Designed and developed an HBase-like system that runs on HDFS and supports the standard *put()* and *get()*.
- Implemented two different variations of recovery through Write Ahead Logs (WALs), used Apache Zookeeper to perform leader election among region servers.

Robert Bosch Engineering and Business Solutions

Sep. 2013 – Sep. 2014

Associate Software Engineer

Bangalore, India

- Developed an iPhone application called DeltaApp using Objective C for issuing reminders to water plants.
- Developed an Internet web browser using C++ in Qt framework for embedded systems.

PUBLICATIONS

Hybrid Serverless Platform for Service Function Chains

Jul 2023

S. K. R and J. Lakshmi, 16th IEEE CLOUD 2023

QoS aware FaaS for Heterogeneous Edge-Cloud continuum

Jun 2022

S. K. R and J. Lakshmi, 15th IEEE CLOUD 2022

QoS aware FaaS platform

Jun 2021

S. K. R and J. Lakshmi, (STEERS Workshop) IEEE/ACM 21st International CCGrid, 2021

Elfstore : A Resilient Data Storage Service for Federated Edge and Fog Resources

Aug 2019

S. K. Monga, **S. K. Ramachandra** and Y. Simmhan, ICWS, 2019

Dynamic Scaling of Video Analytics for Wide-area Tracking in Urban Spaces

Jul 2019

Aakash Khochare, **KR Sheshadri**, R Shriram, Yogesh Simmhan, 2019 19th IEEE/ACM CCGrid, 2019

AWARDS

IEEE TCSC SCALE Challenge

May 2019

Issuer : CCGrid, for "Dynamic Scaling of Video Analytics for Wide-area Tracking in Urban Spaces" CCGrid, 2019

- Handled the vehicular simulation using SUMO, the vehicular traffic was overlayed on the IISc Campus.

Best Paper Award

May 2021

Issuer : Serverless To sErvE moRe at Scale STEERS 2021, with CCGrid

CCGrid, 2021

Dean's Award for Academic Excellence, academic year 2016-2017

Nov. 2017

Issuer: IIIT Hyderabad

Hyderabad, India

Merit prize for featuring in top-10 in the CSE Dept 5th and 6th Semester, BIT

Sep. 2011 – Jan. 2012

Issuer : CSE Dept, BIT Bangalore

Bangalore, India

EDUCATION

IISc, Bangalore

Aug. 2018 – Present

*Ph.D, Serverless computing, Function as a Service (FaaS), IoT
Advised by : Dr. J. Lakshmi, CSL, SERC*

Bangalore, India

IIIT Hyderabad

Aug. 2015 – Jun. 2017

M.Tech CSIS

Hyderabad, India

Bangalore Institute of Technology

Aug. 2009 – Jun. 2013

B.E. Computer Science and Engineering

Bangalore, India