Devikrishna Radhakrishnan

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EDUCATION

UNIVERSITY OF ILLINOIS URBANA-CHAMPAIGN, USA
Master's, Computer Science
2021 - 2023*
CGPA: 3.84/4

NATIONAL INSTITUTE OF TECHNOLOGY CALICUT, INDIA
Bachelor's, Computer Science
2014 - 2018
CGPA: 8.46/10

SKILLS

Languages
C++ • C • Java • Python

Cloud
Docker • Podman
Kubernetes • AWS
OpenShift • OpenStack

Tools
Postman • CRIU
Apache JMeter • Git

COURSEWORK

Cloud Networking
Cloud Computing Applications
Software Engineering
Advanced Operating Systems
High-speed & Programmable Networks
Data Structures & Algorithms

AWARDS

1ST PRIZE | 2019
Cloud Applications Hackathon

Top 100, India | 2015
Invited to Prime Minister's box on Republic Day for meritorious nationwide academic performance

All India 11TH RANK | 2014
AISSCE (National Higher Secondary School Exam)

POSITIONS HELD

Teaching Assistant (UIUC)
CS173 Discrete Structures
CS124 Introduction to CS

Teaching Assistant (NITC)
CS3092 Operating Systems Lab

Senior Executive (NITC)
CS & Engr. Association

Joint Secretary (NITC)
Literary & Debating Club

INDUSTRY EXPERIENCE

RED HAT | Solutions Architect Intern, Telco Tigers team
Raleigh, USA — Summer 2022

- Automated cold migration of existing VMs (blogpost) from RedHat's *OpenStack* platform to *OpenShift Virtualization* which is not currently supported in their Migration Toolkit (MTV).
- Updated OpenShift's demo repository with newly introduced network configurations possible for VMs in OpenShift Virtualization. This repository is used as an introductory tutorial by OpenShift customers.

ORACLE | Applications Engineer, Oracle Service Cloud (OSvC)
Bangalore, India — 2018 - 2021

- Developed secure and optimized APIs for managing access to *OSvC's* database and pushed over 200 commits to its production codebase.
- Refactored, optimized, and added test-driven development for *Orphan Sweep*, an internal utility used to asynchronously handle dependencies of database operations. The optimizations led to reduction in query run-times by over 15x.
- Created a microservice that allows customers to cache frequently retrieved data and deployed it into production using Docker containers. Service is used by 100+ corporate customers.

RESEARCH EXPERIENCE

UNIVERSITY OF ILLINOIS URBANA-CHAMPAIGN | Research Intern
Mentor: Dr. Sibin Mohan, SyNeRCyS Lab — 2020 - Present

- Creating a framework using containers to enable hardware independent execution of real-time applications in an Internet of things (IoT) environment.
- Current focus is on designing a predictable mechanism to perform live migration of containers between edge computing nodes in an IoT system.

INDIAN INSTITUTE OF SPACE SCIENCE & TECHNOLOGY | Research Intern
Mentor: Dr. Vineeth B S, Department of Avionics — Summer 2016

- Worked on improving the probability of packet delivery between inter-connected heterogeneous sub-networks in a Delay Tolerant Network (DTN).
- The work focused on using different routing protocols in each sub-network and studying its impact on packet loss under a variety of traffic load conditions and network cluster sizes.
- Devised an optimal combination of routing protocols to use which maximize the packet delivery probability in the DTN.

PROJECTS

METRIC AWARE LOAD BALANCER FOR MICROSERVICES
Mentor: Dr. Radhika Mittal, ECE Department (UIUC) — GitHub

- Designed a novel load balancing scheme for Envoy which routes requests based on CPU/ memory usage metrics of the services and nodes running in a cluster.
- The load balancing scheme performs ~30% better than Round-Robin and ~42% better than Random, two existing load balancing schemes supported by Envoy.

EXPERIMENTAL OPERATING SYSTEM
Mentor: Dr. Muralikrishnan K, CSE Department (NITC)

- Created an experimental OS (ExpOS) that supports process management, memory management, and system calls.
- The OS supports loading and execution of programs that are pre-loaded in the Experimental String Machine (XSM).