

Devikrishna Radhakrishnan

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Research Interests

Systems: Operating Systems, Networks, Databases, Real-time Systems

Education

2021 - 23*	M.S. , Computer Science University of Illinois at Urbana-Champaign	
2014 - 18	B.Tech. , Computer Science and Engineering National Institute of Technology, Calicut, India	8.46/10
2014	Grade 12 , Higher Secondary Education Kendriya Vidyalaya Pangode, Trivandrum, India	98.4%

Research Experience

2020 - Present	University of Illinois at Urbana-Champaign (UIUC) Mentors: Dr. Sibin Mohan , <i>SyNeRCyS Lab</i>	Research Intern
	<ul style="list-style-type: none">◇ 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.	
2016	Indian Institute of Space Science and Technology (IIST) Mentors: Dr. Vineeth B S , <i>Systems and Networks Lab</i>	Research Intern
	<ul style="list-style-type: none">◇ 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.	

Industry Experience

2018 - 2021	Oracle	Applications Engineer
	<ul style="list-style-type: none">◇ Was part of the core server team handling the database for <i>Oracle Service Cloud (OSvC)</i> - a leading provider of cloud-based customer service software.◇ Developed secure and optimized APIs for managing access to <i>OSvC's</i> database and pushed over 100 commits in the last 2 years to its production codebase.◇ Refactored, optimised, and added test-driven development for <i>Orphan Sweep</i>, an internal utility used to asynchronously handle dependencies of database operations. The optimisations 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.	

- ◊ Worked on *FOCUS* - a public sector project, undertaken by the **State of Delaware (United States)**, to create a system to maintain and track case records of children, who need health care and/or relocation to foster homes.
- ◊ Worked with the **Delaware Children's Department** (kids.delaware.gov) to develop a system for digitization of data using **VisualForce** framework on the Salesforce CRM platform.

Awards

2019 1st prize in Oracle's Cloud Applications Hackathon

2014 Honoured to be selected (among the **top 100 in India**) to witness the Republic Day Parade from the Prime Minister's box

2014 11th Rank in India in AISSCE (National Higher Secondary School Exam)

Selected Projects

2017 - 18

Analysis of Bitcoin Transactions

Final Year Project

Dr. Gopakumar G, *Data Mining*

- ◊ Analyzed the pertinence of the 'Preferential Attachment' (a.k.a., the rich get richer) phenomenon in a bitcoin network by studying its structure and wealth distribution.
- ◊ Demonstrated the presence of the phenomenon using degree distribution analysis, correlation tests, and clustering techniques.

2016

Experimental Operating System

Course Project (CS3092)

Dr. Muralikrishnan K, *Operating Systems*

- ◊ 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**).

Coursework

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|--------------------------------|------------------------|-------------------------|
| ◊ Data Structures & Algorithms | ◊ Compiler Design | ◊ Computer Networks |
| ◊ Computational Intelligence | ◊ Software Engineering | ◊ Computer Organization |
| ◊ Advanced Operating Systems | ◊ Advanced DBMS | ◊ Data Mining |

Positions of Responsibility

Teaching Assistant	Introduction to Computer Science, UIUC
Senior Executive	Computer Science and Engineering Association, NIT Calicut
Joint Secretary	Literary and Debating Club, NIT Calicut
Teaching Assistant	Operating Systems Lab, NIT Calicut
Senior Executive	Program Committee, Ragam (one of South Asia's largest cultural fests)
Senior Executive	Marketing Committee, Tathva (over 40k participants)

Skills

Languages	C++, C, Java, Python, PHP
Cloud	Docker, Kubernetes
Tools	Git, Postman, Apache Jmeter, ONE Simulator, runC, CRIU
Web	HTML, CSS, JavaScript, MySQL