

Bharat Bhushan Reddy Thotti

TECHNOLOGY ASSOCIATE · GOLDMAN SACHS

Bangalore, India, 560103

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Education

National Institute of Technology Calicut

Calicut, India

BACHELOR OF TECHNOLOGY IN COMPUTER SCIENCE AND ENGINEERING

Jul. 2016 - Jun. 2020

- CGPA: 9.59/10
- *Department Gold Medalist*: **Department Rank 1** among 150 students of Computer Science and Engineering
- *Er M L Bapna Gold Medal & Prof. A. K. Memorial Award*: **Institute rank 1** among 1100+ students of NIT Calicut
- Prof. P. M. Jussay Gold Medal for **Best Outgoing Student** of 2020 from NIT Calicut across all undergraduate departments

Professional Experience

Goldman Sachs

Bangalore, India

TECHNOLOGY ASSOCIATE (SDE 2)

Jul. 2020 - Present

- Experienced in building middleware-based, distributed, event-driven applications and data pipelines using Apache Kafka and Apache Spark
- Implemented internet-facing highly secured microservice-based applications to assist regulatory compliance and avoid federal fines
- Automated deployment procedures by integrating Goldman Sachs' internal SDLC pipelines with Kubernetes as well as multiple AWS services such as Lambda, EC2, S3, API Gateway, Kinesis, SQS, etc
- Apache Cassandra administrator with working knowledge of MongoDB, SingleStore, MySQL, DB2 & Hazelcast

SUMMER ANALYST

May 2019 - Jul. 2019


- Designed and implemented an end-to-end *Health Monitoring service* and integrated it with a distributed transaction processing system, improving SLA metrics and reducing manual efforts by 80%
- Engineered the service to monitor all the microservices of the system to detect and escalate issues such as:
 - Staleness of Data flowing through various pipelines
 - Unresponsive components and issues with retrieving data from upstream DataLake and Kafka Servers
- Incorporated "heartbeats" - periodic software signals - to achieve real-time performance in health reporting
- Worked extensively with Java, Kafka Streams, SingleStore, and Reactive Spring

IIT Bombay | Fundamental Research Group (FRG)

Mumbai, India

SOFTWARE DEVELOPMENT INTERN | [PROF. DB PHATAK](#) | 

May 2018 - Jul. 2018

- Developed a Notification System for *Collaborative Communities Portal* - an internal knowledge sharing platform
- Incorporated Django-Channels, WebSockets, and other Polling techniques to make the Notification System real-time
- Adhered to Test Driven Development by implementing unit & integration tests to verify the correctness of the code | 

Key Projects

Multi-Region Application Resiliency on Cloud

Bangalore, India

SYSTEMS INTEREST GROUP, GOLDMAN SACHS

Apr. 2022 - Sept. 2022

- Developed a *multi-region recovery strategy* for application resiliency to sustain region-wide failure within a public cloud setting
- Integrated *Apache Zookeeper* with *Canary Deployment strategies* to failover applications between different geographical regions within 20 mins
- Collaborated with the *Apple Card team* within Goldman Sachs and incorporated the strategy into their payments logging service

Experimental Operating System(ExpOS) |

Calicut, India

[DR. K. MURALIKRISHNAN](#), NIT CALICUT

Aug. 2018 - Nov. 2018

- Built an operating system kernel for a hypothetical machine based on MIPS architecture
- Implemented functionalities to handle:
 - *Process Management*: Scheduling and dispatching processes along with multi-programming support
 - *Virtual Memory Management*: Allocating memory for processes with support for demand paging
 - *User Management*: Manage multiple users on OS by implementing multi-user system calls
 - *Multi-Core Extension*: Implemented process synchronization techniques for kernel to exploit parallelism on a 2-core machine

Compiler for Experimental Language (EXPL) |

Calicut, India

[DR. K. MURALIKRISHNAN](#), NIT CALICUT

Jan. 2019 - Jun. 2019

- Built compiler for a toy object-oriented programming language(EXPL) running on a hypothetical machine based on MIPS architecture
- Implemented support for user-defined data types addressing *memory fragmentation* issues
- Built Dynamic memory allocation library that implements Alloc(), Free(), and etc
- Implemented support for object-oriented features such as *Single Inheritance* and *Sub-type Polymorphism*
- Compiler was written entirely in C making use of tools like lex and yacc for parsing

- Implemented a stand-alone system for segmentation of CT scans using various image processing and computer vision techniques
- Developed pre and post-processing modules for medical images using distributed data processing libraries in python
- Donated the system to [MVR Cancer Centre and Research Institute](#) which is currently being used by radiation oncologists in radiation therapy planning, significantly reducing the time they spend in contouring CT scans

Publications

Using Standard Machine Learning Language for efficient construction of Machine Learning Pipelines

Libson, Portugal

16TH INTERNATIONAL CONFERENCE ON INFORMATION TECHNOLOGY AND APPLICATIONS ([ICITA 2022](#))

Jul. 2022 - Nov. 2022

- **Status:** Accepted On August 24th 2022, will be published in April 2023
- Developed Standard Machine Learning Language(SML) which is an attempt to provide a language-agnostic framework to simplify the creation of machine learning pipelines
- Idea is to use SQL-like queries to build ML pipelines, abstracting out all the data structures and library-level concerns
- Worked extensively on designing the grammar and building parser break to down the query and generate driver actions
- **Primary Author** of the paper presented at [ICITA 2022](#) conference held at Libson, Portugal

Skills

Languages and Databases	Java, C++, Python, SQL, Go, Apache Cassandra, SingleStore, MongoDB, Neo4j
Framework and Technologies	Apache Spark, Kafka, Spring Boot, Django, Reactive Spring, Serverless, AWS: Lambdas, API Gateway, s3
Tools and Libraries	JPA, ActiveMQ, Spring Caching, Elastic Search, Mockito, Logback, Tableau, Lex, Yacc

Selected Electives

Courses	Operating Systems, Compiler Design, Computer Networks, Principles of Programming Languages, Database Management Systems, Computer Organization
Laboratory	Operating Systems Laboratory, Hardware Laboratory, Programming Laboratory

Positions of Responsibility

Free and Open Source Software Cell ([FOSS Cell](#))

Calicut, India

EXECUTIVE MEMBER

Apr. 2018 - Apr. 2020

- Organizer of FOSSMEET 2018 and 2019: a national conference on Free and Open Source Software, a platform that acts as a culmination ground for lots of people working on the FOSS movement to come together and share ideas
- Took part in various Debian packaging workshops, hackathons and packaged many NodeJS packages to DEB format for the Debian platform

Computer Science and Engineering Association ([CSEA](#))

Calicut, India

SENIOR EXECUTIVE

Apr. 2017 - Apr. 2020

- Organized workshops like Game Development using Python, Web Automation using Selenium and several events to promote Coding culture within the campus
- Coordinated a number of events for the Computer Science Department with the aim of improving students' soft skills

Awards and Extra-curriculars

- 2019 **Google Hash Code**, Achieved an All India Rank of 45 and a global rank of 1146 out of 70,000+ participants
- 2018 **ACM ICPC-2018 India Regionals Finalist**, Achieved an All India Rank of 77 out of 3000+ teams participated
- 2021 **Goldman Sachs Best Athlete Award 2021**, For leading our basketball team to 13 wins out of 18 matches played and personally scoring a total of 221 points in the season
- 2022 **Digifest 2022, runner up award**, For our work on Multi-Region Application Resiliency on Cloud
- 2017 **Silver medallist at Inter NIT Sports meet 2017**, Part of the NIT Calicut Basketball Team