

SAI CHARAN REDDY K

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SUMMARY

A graduate student in Computer Science, with a strong impulse to work in a challenging environment where my academics paired with my skill-set could be applied and made practical, with keen interest to enrich my knowledge and gain experience in real-world applications.

A quick and self-learner with effective communication who builds positive, cohesive relationship. Strong interpersonal skills with notable written and verbal communication, venerable leadership expertise in planning, communication, decision-making and problem-solving.

EDUCATION

Bachelors in Computer Science	2015 - 2019
Birla Institute of Technology & Science-Pilani, KK Birla Goa Campus. CGPA : 4.52/10	
TSBIE, Classes XI-XII	2013 - 2015
Sri Chaitanya Junior Kalashala, 972/1000	
CBSE, Class X	2013
Dream World School, CGPA : 10/10	

ELECTIVES/TECHNICAL SKILLS

Languages	C++, Python, Visual Basic
IDEs	Visual Studio, SlickEdit, Eclipse
Tools	Docker, Hadoop, ElasticSearch, Mesos, JIRA
Cloud Platforms	Amazon Web Services (AWS), Microsoft Azure
Subjects	Object-Oriented Programming, Data Structures & Algorithms, Operating Systems, Principles of Programming Languages, Database Systems & Computer Networks
Electives	Real Time Systems, Data Storage Technologies & Networks, Cloud Computing, Machine Learning, Neural Networks & Fuzzy Logic
Technical Proficiency	Linux (Bash), Git, Networking Concepts (Topologies; OSI Model; TCP/UDP/FTP/HTTP/SMTP Protocols; DNS; Routing; Socket Programming), OS (Virtualization, File Systems, Threads, Scheduling Algorithms, Memory Access), RDMBS (MySQL) and OODB, RAID, SAN & NAS Concepts, Data Access and Storage Windows APIs

INTERNSHIP/WORK EXPERIENCE

Software Engineer Trainee - Tally Solutions	since September 2020
<ul style="list-style-type: none">Was trained on Tally Product (TallyPrime) on both the Front (TDL) and Back ends (Underlying C++ for the TDL, Memory manager, Windows APIs for Data Access & Storage, Event Controller).Built additional reports using TDL (Tally Definition Language) for the product (most importantly: Top 10 Selling Stock Items, insertanother).Currently, working on introducing graphs into Tally Reports in Browser (TRiB).	
Research Intern - Infinity Labs, UST Global	May 2017 - July 2017
<ul style="list-style-type: none">Was mentored in Penetration Testing concepts, and built a simple Visual Basic based Key-logger with functionalities of recording keystrokes and mouse clicks. Event-triggered snapping of screenshots was added post the internship period.Packaged the program into an application with added functionality of automated mailing at regular/event-triggered intervals for remote retrieval of data.	

- Additionally, was also involved in collecting data for a white-paper on comparative study of various services offered by five major public cloud service providers: AWS, MS Azure, Google, IBM & Oracle Clouds.
- As a part of drive to introduce interns to cloud, was familiarized with Azure ML Workspace and worked on a sample prediction models for Finance Markets based on existing data-sets on the Azure.

MAJOR PROJECTS

1. Safety Analysis of Industrial Cyber-Physical Systems Modeled in AADL May 2019 - March 2020

- Safety-critical Industrial Systems were identified and modeled in Architecture Analysis and Design Language (AADL), an architecture description language.
- Error (Propagation) Models were built into these AADL models for the Safety Tests including Fault Tree Analysis, Fault Impact Analysis & Functional Hazard Analysis
- Worked on performing Graph Transformations on the instantiated AADL models, to identify critical components and mitigate the faults (using fault-tolerant designs including Triple Modular Redundancy (TMR) with Voter(s), Circuit-Breaker Pattern), reducing the probability of error propagations in the AADL models using Story-Driven Modelling (SDM) tools.
- The framework, on its completion, will provide identification of critical components and return potential solutions to establish/improve the fault-tolerant design.

2. Digital Maturity Assessment of Hospitals in India

Undergraduate Thesis

June 2019 - December 2019

- Aimed at understanding the percentage of Digitization over traditional Paper-Driven records, surveyed Hospitals across geographies in India, and evaluated data based on Confidentiality, Integrity and Availability (CIA) triad
- Built a framework for performance evaluation of each organisation surveyed based on metrics sampled and performed comparative analysis of my results with similar studies conducted across European Union and North America

MINOR PROJECTS

1. Performance Analysis of MapReduce Tasks

- On a Wikipedia text data dump, a simple MapReduce task of word-count was performed in AWS Elastic MapReduce (EMR) clusters (upto 32 nodes) to understand horizontal scaling in MapReduce tasks.
- Analysis was performed with varying number of Mappers and Reducers as well as modification of word-count program to understand the aspects of performance overheads and optimization.

2. Comparative Study of Performance in various Virtualized Scenarios

- To understand the performance costs of various virtualisation scenarios, performance analysis was done on a native machine (non-virtualized scenario), a Virtual Machine and a Container
- A CPU intensive task (a modified version of Geekbench CPU Benchmarking suite), an I/O intensive task (IOZone Benchmarking suite) and a CPU plus I/O intensive task (untarring a large archive) were sampled and analysed using ElasticSearch (Kibana, MetricBeat).

3. Comparative Study of Real Time Scheduling Algorithms in Cheddar and Refinement for Discrete Use Cases

- Cheddar is an open-source real-time scheduling simulator written in AADL, which was used to plot and understand the schedulability of various existing algorithms and modify them for discrete scenarios.

4. Building Documentation of Scheduling Algorithms in Linux Kernel

- Linux Kernel v5.0.2's Completely Fair Scheduler (CFS) and Real-Time Schedulers (Round-Robin & First-Come First-Serve) documentation was built using Source Code in C.

5. Performance Analysis of Containerizers in Mesos

- Three different containerizers included in Mesos, an open-source cluster manager, were studied with respect to behavior in high workload scenarios.

POSITIONS OF RESPONSIBILITY

Administrator - Campus-wide P2P Chat and File-Sharing Hub January 2016 - December 2019

- Administrator for a campus-wide peer-to-peer file-sharing and chat hub that facilitated quick and easy to use communication among students, based on Direct Connect (DC) protocol.
- Involved in hosting and running the hub 24*7 for 3000+ students, catering to students' needs as demanded in functionality of the hub as a go-to place for any kind of information resources.
- Worked on Lua scripts, for functions such as noticeboards, mini-games, polls, etc that could be plugged into PtokaX Direct Connect Hub server application, which was used to host the hub.

Core Member - Centre for Technical Education (CTE) August 2016 - May 2017

- Volunteered in organizing classes and events for 250+ students in the BITS Pilani, Goa Campus (BPGC) in the in-house mentoring program, CTE.
- Involved in scrutinizing of Mentorship applications and ensuring of proper conduct during the period of course offering, examination and awarding certification.

Network Representative - Council for Student Affairs August 2015 - July 2016

- Elected as Network Representative by a huge majority, served as the point of contact for 185+ students of the hostel for any Network related issues between them and the Network Administrators of BPGC.
- Represented the aforementioned students at the Student Affairs Senate, Council for Student Affairs and Student Welfare Division meetings.

PERSONAL PROFILE

Date of Birth	15 April 1997
Address	C/O Thimma Reddy P, R.No.105, #997, 7th Main, Tulasi Theatre Road, Marathahalli Village, Bangalore, Karnataka - 560037
Languages known	English, Telugu and Kannada.
Interests	Interactive story-driven entertainment and puzzles, video gaming
GitHub	https://github.com/konqeror369
LinkedIn	https://linkedin.com/in/sai-charan-reddy-k-ab6442104/