

CHAITANYA B BHANDARI

☎ +1 (217) 480-2361 ✉ cbb1996@illinois.edu [🌐 linkedin.com/in/chaitanya-bhandari-675a21153](https://www.linkedin.com/in/chaitanya-bhandari-675a21153)

Education

University of Illinois Urbana-Champaign

May 2024

Master of Science in Computer Science

Relevant Coursework: Distributed Systems, Advanced Data Management

Birla Institute of Technology and Science, Pilani

May 2018

B.E.(Hons.) Computer Science

Cumulative GPA: 9.11/10 (Distinction)

Relevant Coursework: Operating Systems, Computer Networks, Database Systems, Computer Architecture, Design & Analysis of Algos

Research Experience

Study of Cross-System bugs in Real-World Cloud Systems

Aug. 2021 – Present

Supervisor: Dr. Tianyin Xu

University of Illinois at Urbana-Champaign

- Studying failures in modern distributed system infrastructures that are rooted in erroneous interactions between the constituent distributed systems. Real-world cloud systems being studied: Spark, Flink, Hive, HBase, HDFS, Kafka
- Through this study, we aim to come up with actionable insights into the patterns that these failures exhibit and pave the way for future research towards making distributed infrastructures resilient to cross-system failures.

Industry Experience

Nutanix Inc.

July 2018 – Nov. 2021

Member of Technical Staff - 3

Bengaluru, India

- Designed and implemented a distributed orchestration & resource allocation engine for Nutanix's CI/CD pipeline. The engine reliably manages ~5,000 on-premise Nutanix nodes and serves ~10,000 deployment requests per day.
- Developed hardware-specific work-conserving schedulers for optimal allocation of various types on-premise hardware like GPU Nodes, Storage Nodes, & Compute Nodes.
- Separated Docker Swarm infrastructure for a long-running and ephemeral workloads. This effort made applications more dependable by ensuring that rogue ephemeral containers do not affect the functioning of critical long-running services.
- Pioneered the separation of a monolithic MongoDB production replica set shared by two applications into two replica sets with zero application downtime, making both applications more reliable & independently scalable.
- Implemented a virtual machine management system that manages the Compute & Storage on a fleet of Nutanix clusters to ensure virtual machine workloads are scheduled on clusters with adequate capacity.
- Employed network & hardware virtualisation to provision multiple virtual clusters on a single physical cluster. The feature optimised company-wide hardware utilisation by about 300% as most teams adopted it for internal cluster needs.

Nutanix Inc.

July 2017 – Dec. 2017

Member of Technical Staff - Intern

Bengaluru, India

- Developed a utility to deploy up all the systems built by team as containerized microservices on a single, lightweight virtual machine, for alpha testing of the systems.
- Established a suite of ~162 automated functional tests that saved more than half a day of manual effort per release build and helped discover critical bugs before releases.
- Implemented Git Bisection support that completely automated the erstwhile manual, cumbersome process of hunting down offending commit(s) due to a bad check-in into the master branch.

Technical Proficiency

Programming Languages: Python, C++, Java, HTML/CSS, JavaScript, SQL

Data Management: MongoDB, PostgreSQL

Technologies/Frameworks: Docker, Kubernetes, Ansible, Django, Flask, RabbitMQ, Git

Honors & Awards

- Graduated from BITS Pilani with Distinction, awarded to top 2% students who secure a GPA > 9 - June 2018
- Winner at Nutanix Hackathon 6.0 (Category: Accelerating Xi Services) - Aug. 2018
- Winner at Nutanix Hackathon 5.0 (Category: Make the core ready for \$5B revenue market) - Oct. 2017

Projects

Nutanix CaaS(Cluster as a Service) on GCP

Aug. 2018

Hackathon Project

- Employed network & hardware virtualization to provision virtual clusters on GCP virtual machine instances.
- The proof-of-concept that we presented in the Hackathon was productized as Nutanix Test Drive, which saves millions of dollars in capital expenditure related to hardware acquisitions.

PhD Information Management System

Jan. 2018 – May 2018

Supervisor: Dr. R. Gururaj

- Designed and implemented a web-application for easy insertion, updation and querying of BITS Pilani Hyderabad Campus' PhD scholar data.
- Configured asynchronous replication across multiple DB servers and established a robust disaster recovery plan to ensure the platform's high-availability.

Study and Implementation of the Role Mining Problem

Jan. 2017 – May 2017

Supervisor: Dr. Barsha Mitra

- Studied and implemented the NP-complete greedy algorithm that relied on Optimal Boolean Matrix Decomposition of a User-Permission Matrix into User-Role & Role-Permission matrices.
- Integrated pre-processing heuristics with the aforementioned algorithm to optimize the runtime.

Teaching Experience

Nutanix

July 2018 – Nov' 2021

Mentor & Bootcamp Speaker

Bengaluru, India

- Mentored interns and new hires through in-depth knowledge transfer and code-walkthrough sessions related to the team's application stack.
- Represented the Developer Productivity (DevProd) organization at the Engineering Bootcamp; educated newly hired engineers about the applications developed by DevProd and the use-cases that they solve.

Make a Difference

July 2019 – March 2020

Academic Support Volunteer

Bengaluru, India

- Actively volunteered to teach underprivileged high school students in shelter homes, helping MAD achieve its goal to ensure all children in need of care and protection are able to realize long-term outcomes equitable with the middle-class.

Extracurriculars

Gifts by Rashi

March 2021 – Nov. 2021

Artist

- Worked with 20+ customers and arranged personalised music performances that were delivered over Zoom, as a part of the "Song By Artist On Video Call" feature.

Music Club, BITS Pilani

Aug. 2016 – May 2017

Joint Secretary

Hyderabad, India

- Managed a team of 25+ people to successfully organize a variety of music-related events in the college's cultural fest.
- Performed at a multitude of cultural events as a vocalist & guitarist in the club from Aug. 2015 - May 2018.