

# Richi Dubey

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Blog: <https://rtemswithrichi.wordpress.com/>

## EDUCATION

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### Georgia Institute of Technology – Atlanta, GA

August 2024 - June 2026 (Expected)

Master of Science, Computer Science (Machine Learning)

Relevant coursework: Computer Vision, Deep Learning, Natural Language, Graduate OS (TA)

### Birla Institute of Technology & Science, Pilani – Goa, India

Aug 2017 - June 2021

Bachelors in Computer Science, GPA: 3.9/4

Relevant coursework: Data Structures & Algorithms, Database Systems, Computer Networks (A grade), Operating Systems (A grade), Computer Programming (in top 7/850)

## PROJECTS

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### Improving LLMs performance on mathematical operations

Fall 2024

- [Integrating](#) ALUs in transformer block to improve performance of LLMs like GPT and Llama. Initial results show **less than .07** average difference between the calculated and the actual results.

## EXPERIENCE

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### CERN (European Organization for Nuclear Research) – Geneva, Switzerland

Software Engineer

October 2022 – July 2024

- Managed a distributed and redundant [SCADA](#) system called [REMUS](#) that interfaces **1000+** diverse sensors deployed in CERN's accelerator, experimental, and surface areas.
- [Developed](#) multi-threaded device drivers in C++ for REMUS and state-aware fault-tolerant networking programs for sensors with outdated OSes, enabling robust networking capabilities.

### Oracle – Bangalore, India

Software Engineer

July 2021 – September 2022

- Implemented new features and fixed production bugs in a multi-tenant application, [Oracle Process Automation](#), with a microservice architecture on Oracle Cloud.
- Wrote terraform code to create and manage the deployment of infrastructure required for the application on the cloud. Deployed these codes in a part of a 5-member team across **50+** OCI data centres worldwide.

### Google – Remote

[Summer of Code](#) Student with [RTEMS](#)

May 2020 – Aug 2020

- [Contributed to RTEMS](#), a POSIX-compliant open-source real-time operating system extensively utilized in various domains, including NASA/ESA satellites and particle accelerators across US DoE national labs.
- [Implemented](#) the Strong Arbitrary Processor Affinity (APA) scheduler, a state-of-the-art scheduler that had not been implemented in a real-world operating system.
- The Strong APA scheduler can dynamically move high-priority tasks between processors to optimize resource use and accommodate lower-priority tasks with affinity constraints.
- The scheduler is proven to schedule roughly **20%** more task sets than other schedulers for certain utilization. Published a [paper](#) and wrote a [blog](#) on the implementation.

## SKILLS

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**Programming Languages/Frameworks:** Pytorch, Kubernetes, C/C++/C++14, Python, Java, SQL, MQTT

**Languages:** Fluent in English and Hindi, Conversational in French

**Interests:** [Piano](#), [Painting](#), Skateboarding, Real-Time Systems, Computer Vision

## AWARDS

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[Merit-Need](#) Scholarship — BITS Pilani

2017-2021

[Hercules](#) Prize - edition 2019/2020 — University of Modena and Reggio Emilia, Italy

Feb 2021