

# RITUPARNA WARWATKAR

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## EDUCATION

### Indian Institute of Information Technology, Guwahati

Bachelor of Technology, Computer Science and Engineering

Dec 2020 – May 2024

CGPA: 8.21

## TECHNICAL SKILLS

**Languages:** C, aarch64, TypeScript, Python, Dart, Java

**Database:** MongoDB, Redis, SQL, Firebase, Pinecone

**Technologies:** Linux, KVM, Docker, ME(F/A/R/V)N Stack

**Other:** AWS, Git, Shell Scripting

## EXPERIENCE

### Amazon Web Services - EC2

Feb 2025 – Present

Berlin, Germany

Software Dev Engineer (Embedded Systems)

Linux | KVM | EC2 Nitro | Virtualization

- Drove end-to-end global **deployment** and rigorous testing for the **hypervisor** and critical Nitro components, ensuring stability and security across a variety of Accelerated Computing platforms.
- Conducted in-depth **benchmarking** and stress testing across accelerated platforms and debugging failures to guarantee peak performance and critical stability in production.
- **Built** and **automated** various testing payloads including Deep Learning training, LLM inferencing workloads to validate system performance and stability for both GPUs and CPUs.
- Managed critical production **alerts** during **on-call** rotation, quickly diagnosing and debugging failures to **minimize downtime** and prevent recurrence.

### Veritus.ai

May 2024 – Sept 2024

Kobe, Japan

Software Development Engineer

Node.js | MongoDB | Redis | React | AWS | Next.js | tRPC | OpenAI | Gemini | Pinecone

- Implemented a comprehensive authentication system, including user signup, waitlist management, login, **OAuth social login**, email verification, and password management.
- Developed and integrated a robust **payment processing** and credit control system using **Stripe**.
- Developed a fully-featured full-stack **admin panel** for managing users and platform content, including features such as waitlist management, user transactions, and user feedback.
- Developed a **feature flag** system to enable or disable features without modifying source code or redeploying, allowing for **controlled feature rollouts** and **targeted user testing**.
- Implemented context caching to optimize AI workflows, **reducing LLM costs** by up to **65%** by reusing cached tokens instead of passing the same input repeatedly.
- Implemented a LaTeX renderer for rendering beautiful mathematical expressions and equations generated by the LLMs.

### FIITJEE, Edfora

Dec 2023 – April 2024

Delhi, India

Software Developer Intern

Node.js | MongoDB | Redis | Angular | React | Swagger

- Developed a full-stack **dynamic form builder** and response system, enabling institute admins to create and assign custom forms to students, enhancing platform engagement and **eliminating reliance** on third-party services like Google Forms.
- Implemented **device registration and management** for user authentication on the Glorifire Jr. platform, utilizing **fingerprint.js** for the web and **device IDs** for mobile app. tm
- Developed a full-stack "Question Contribution" module, enabling students to contribute **various question types**, including multiple choice, numerical, and matrix match, to the question bank.
- Enhanced student engagement by up to **50%** through push notifications, emails, and in-app notifications.

## PROJECTS

### Quark OS (Ongoing) | GitHub

- A minimal **aarch64** kernel/operating system for the qemu arm virt board in **C** and assembly.
- A 64-bit multi-tasking kernel with FAT16 filesystem, leveraging arm's memory protection mechanisms.
- Memory virtualization, virtual filesystem layer, FAT16 filesystem driver, task/process functionality, UART drivers, and memory management.
- An ELF file loader along with a fully functioning 64-bit multi-tasking kernel with a working shell.