RITUPARNA WARWATKAR

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EDUCATION

Indian Institute of Information Technology, Guwahati   Dec 2020 – May 2024
Bachelor of Technology, Computer Science and Engineering   *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
Software Dev Engineer (Embedded Systems)   *Berlin, Germany*
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
Software Development Engineer   *Kobe, Japan*
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
Software Developer Intern   *Delhi, India*
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) | ⬡

- 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.