

Dibbayajyoti Roy

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EXPERIENCE

Yupcha Softwares Pvt. Ltd.

Jul. 2025 – Present

Full Stack Software Engineer

Agartala, India

- Architected and rebuilt a production **AI Video Interviewer** from the ground up, migrating a high-latency STT → LLM → TTS pipeline to a real-time speech-to-speech architecture using **AWS Bedrock Nova Sonic, LiveKit, Pipecat and WebRTC**.
- Built production-grade web applications with **Next.js, Node.js and PostgreSQL**, implementing employee management, attendance, leave management, payroll, role-based access and reporting features.
- Designed PostgreSQL schemas, built **12+ REST APIs**, implemented indexing and Row-Level Security, and deployed production services using Docker, Nginx and Ubuntu Linux.
- Reduced application page load time by **44%** by eliminating N+1 database queries, optimizing PostgreSQL indexes and implementing route splitting.
- Optimized backend infrastructure by reducing Redis polling latency by nearly **90%** using batched MGET operations and resolved complex LiveKit and FFmpeg audio-video synchronization issues in production.

OPEN SOURCE PROJECTS

Fresco | Rust, GTK4, Wayland, X11 [GitHub](#)

- Built an open-source Linux live wallpaper engine supporting Wayland and X11 desktops with native GTK4 interface.
- Reached **120+ active users** and **900+ downloads** across 40+ countries.
- Implemented video wallpapers, wallpaper scheduling, wallpaper library, system tray integration and optimized playback pipeline.

AHTML | TypeScript [GitHub](#)

- Created an AI-readable HTML standard that generates OpenAPI 3.1, JSON-LD, llms.txt and WebMCP from a single source.
- Published as an open-source package with **21k+ downloads**.

RoyUI | React, TypeScript [GitHub](#)

- Built a TypeScript-first React component library focused on accessibility, developer experience and performance.
- Published as an open-source npm package with thousands of downloads.

WhatBroke | TypeScript [GitHub](#)

- Developed an AI-powered debugging CLI and MCP server that packages crash context for faster issue diagnosis.
- Supports multiple test runners with Git-aware suspect ranking to accelerate debugging workflows.

EDUCATION

ICFAI University, Tripura

2022 – 2026

Bachelor of Technology in Computer Science and Engineering

Agartala, India

- **Honors:** Winner, NITA Arjuna 2.0 National Hackathon (2025), Winner, Technovate Project Exhibition (2025), 1st Runner-Up, NITA-ISRO Space Hackathon (2024).

SKILLS

Languages: TypeScript, JavaScript (ES2023), Rust, Python, SQL

Frontend: React, Next.js, TanStack Query, Tailwind CSS, HTML, CSS, GTK4

Backend: Node.js, Express, Hono, FastAPI, REST APIs, Server-Sent Events, WebRTC, OAuth, JWT, Zod

Databases: PostgreSQL, Redis, MongoDB, DynamoDB

Cloud & DevOps: Docker, Linux, Nginx, AWS Bedrock, CloudWatch, Cloudflare Workers, Proxmox, Systemd, Git, GitHub Actions

Technologies: LiveKit, Pipecat, FFmpeg, Tokio, OpenAPI, MCP, AI Agents

OPEN SOURCE CONTRIBUTIONS

ReductStore | *Rust* [GitHub](#)

- Contributed **7 merged pull requests** to a production Rust time-series database, improving observability, replication performance and diagnostics.
- Implemented cross-cutting system event refactoring, replication batch compression and performance optimizations that shipped in production releases.

Meta Pyrefly | *Rust* [GitHub](#)

- Contributed a merged pull request fixing a false-positive untyped-import diagnostic by improving PEP 561 submodule handling in Meta's Python type checker.

ACHIEVEMENTS

- Winner, **NITA Arjuna 2.0 National Hackathon** (2025)
- Winner, **Technovate Project Exhibition** (2025)
- 1st Runner-Up, **NITA-ISRO Space Hackathon** (2024)