

Dhrubojyoti Saha

Software Engineer | Full-Stack Developer

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PROFILE

Computer Science undergraduate at BRAC University building production-grade web systems, developer tools, and low-level software. Experienced in Next.js, TypeScript, PostgreSQL multi-tenancy, database security, CI/CD, and systems programming in Rust and C. Demonstrated track record of architecting and shipping public SaaS platforms, research engines, and CLI applications.

EDUCATION

BRAC University Dhaka, Bangladesh
B.Sc. in Computer Science 2024 – Present | Expected 2028

- Relevant Coursework:** Data Structures & Algorithms, Database Systems, Computer Architecture, Computer Graphics, Artificial Intelligence & Machine Learning

TECHNICAL SKILLS

Languages	TypeScript, JavaScript, Python, Rust, C, C++, Java, SQL
Full-Stack & Web	React, Next.js, Node.js, Tailwind CSS, REST APIs, GraphQL, Webhooks
Databases & Cloud	PostgreSQL, Prisma ORM, Supabase, Neon, Cloudflare R2, Redis, Docker, Vercel
Security & Testing	Row-Level Security (RLS), RBAC, Auth Guards, Playwright, Vitest, CI/CD (GitHub Actions)
Systems & Tooling	Linux/Unix, Git, Systems Programming (Rust/C), Terminal UIs, Technical Documentation

SELECTED PROJECTS

porcupineResearch [\[GitHub\]](#) [\[Live\]](#)
Next.js, React, TypeScript, Prisma, PostgreSQL, Supabase, Playwright, Vercel

- Engineered a reproducible literature-review platform federating search across OpenAlex, Crossref, arXiv, Europe PMC, and Semantic Scholar with automated cross-source deduplication.
- Designed provenance-first workflows for screening, quote-anchored evidence extraction, PRISMA flow diagrams, and dual-reviewer screening with automated Cohen’s Kappa (κ) calculation.
- Implemented PostgreSQL Row-Level Security (RLS), passwordless authentication, encrypted messaging paths, and comprehensive end-to-end testing with Playwright, Vitest, and pgTAP.

Cutline OS [\[GitHub\]](#) [\[Live\]](#)
Next.js, TypeScript, PostgreSQL, Prisma, Clerk, Tailwind CSS

- Architected a multi-tenant B2B agency management SaaS integrating CRM, project pipelines, invoicing, analytics, and team messaging with strict tenant isolation.
- Enforced tenant boundaries via database-level `businessId` partitioning, server-side authorization checks, Clerk RBAC, and middleware-level route protection to prevent data leakage.
- Designed transactional financial workflows storing monetary values as integer minor units to eliminate floating-point precision errors; built background jobs and webhook synchronization.

Teleporter [\[GitHub\]](#) [\[Live\]](#)
Next.js, TypeScript, PostgreSQL, Neon, Cloudflare R2

- Developed a zero-signup ephemeral file-sharing platform enabling high-speed uploads and document transfers via pre-signed S3/R2 URLs and expiring claim links.
- Integrated Cloudflare R2 for distributed object storage with automated TTL-based garbage collection to reclaim storage upon transfer ticket expiration or manual deletion.
- Built rich in-browser previewers for Markdown with KaTeX math rendering, syntax highlighting across 150+ languages, interactive CSV tables, and media streaming.

Rust Text Editor [\[GitHub\]](#)
Rust, Ratatui, Crossterm, Ropey, TOML

- Engineered a terminal-based text editor in Rust featuring modal editing, Rope-based buffer data structures for efficient large-file edits, and syntax highlighting across multiple languages.
- Implemented configurable color themes, incremental fuzzy search, mouse interaction, and cross-platform system clipboard integration.

LEADERSHIP & AWARDS

Executive, IT Department — Robotics Club of BRAC University 2025 – Present

- Manage IT operations and internal digital tooling for a 500+ member student organization, overseeing event registration portals, digital assets, and technical infrastructure.
- Direct visual branding and static media campaigns for club recruitment drives and flagship competitive robotics tournaments.
- Database Project** — CSE370 Database Systems, BRAC University (2026).
- Machine Learning Project** — CSE422 Artificial Intelligence, BRAC University (2026).
- Competitive Programming:** Solved 100+ algorithmic problems on Codeforces in C++ and Java covering graphs, dynamic programming, greedy algorithms, and data structures.