PURBAYAN PRAMANIK

Kolkata, West Bengal

✉ Gmail   in Linkedin   GitHub   🐦 X

EDUCATION

National Institute Of Technology Durgapur   **2022 − 2026**
B.Tech - Mechanical Engineering   *Durgapur, West Bengal*

TECHNICAL SKILLS

Skills: Full Stack Development, Systems Programming, Open Source, Linux Customization
Languages: TypeScript, Rust, C, Go, JavaScript, Shell, Python
Web Technologies: React, Next.js, Tailwind CSS, Node.js, Express.js, HTML, CSS, ShadCN-UI, Framer Motion
Systems & Low-Level: TCP Networking, FFT/DSP, TF-IDF Search Algorithms, Concurrency, Audio Processing
Developer Tools: Git, Docker, Linux, Hyprland, Zed, Neovim, VS Code, GitHub, Postman, Vercel, Bun
Databases: PostgreSQL, MongoDB, Supabase, Firebase

PROJECTS

wayforged ↗ | Shell, TUI, charmbracelet/gum, Hyprland, Linux   **2025**

- TUI-based installer for a complete Fedora Hyprland development environment, powered by charmbracelet/gum.
- 14 installation phases covering 22 config files with three install modes (full, minimal, custom).
- Idempotent design with error recovery — retry, skip, or view logs on any phase failure.

Canvas Kit ↗ | TypeScript, Next.js 15, React 19, Tailwind CSS, Canvas API   **2025**

- Lightweight drawing application with multiple tools (Brush, Eraser, Rectangle, Circle) and keyboard shortcuts.
- Layer system with reordering, visibility toggles, color palette, opacity controls, and PNG export.
- Built with Next.js 15 and React 19, deployed on Vercel.

4at ↗ | Rust, Go, TCP, Concurrency   **2025**

- Multi-user TCP chat server built from raw sockets — no frameworks. Dual implementation in Rust and Go.
- Token-based authentication, rate limiting, ban system, and broadcast messaging.
- Compares OS threads (Rust std::thread) vs green threads (Go goroutines) for concurrent connections.

seroost ↗ | Rust, TF-IDF, HTTP, JavaScript   **2025**

- Local search engine that indexes documents using TF-IDF, ranks by relevance, and serves results over HTTP.
- Custom implementation — no search library. Tokenization, inverted index, TF-IDF scoring from scratch.
- Full-stack: Rust backend with only 3 external crates, JavaScript/HTML web frontend.

musializer ↗ | C, FFT, raylib, DSP   **2025**

- Real-time audio frequency spectrum visualizer using custom FFT implementation (~670 lines of C).
- Header-only FFT library with 256 frequency bins at 44,100 Hz sample rate, O(N log N) complexity.
- Single external dependency (raylib). Visualizes audio decomposition into frequency components in real time.

OPEN SOURCE

- Contributor to **Apache ECharts** (65,000+ stars) — the largest open source charting library.
- Contributed to the **shadcn ecosystem** through **fiddle-factory** — component library PRs.

INTERNSHIP

fiddle-factory ↗   **Dec 2025 – Ongoing**
Software Engineer (Contractor)   *Remote*

- Worked on the canvas rendering system — added theme/mode switching, auto-pan, visual component grid, and element inspector; helped fix canvas loading bugs for new users.
- Added chat features including slash command menu, clear chat, Claude health checks, and helped improve message send performance and clipboard handling.
- Helped set up Storybook across 4 repos (fiddle, shadcn-ui, eleven-labs-ui, design-engineer) — wrote stories for UI primitives and added MutationObserver-based content readiness detection.
- Worked on build pipeline — integrated Storycap-based screenshot system, post-commit build triggers, and ripgrep-powered search.
- Helped add access control with allowlist, user types, template restrictions, and PKCE auth flow for the dashboard.
- Fixed 15+ bugs and DX issues — toast migration (react-toastify to sonner), eslint react-hooks cleanup, double-submission prevention, and loading state improvements.

fiddle-factory ↗   **May 2025 – Aug 2025**
Software Engineer Intern   *Remote*

- Migrated the canvas system from react-flow to tldraw — removed previous node implementation and added custom shapes, tools, preview components, and data conversion utilities.
- Migrated the cloud sandbox from StackBlitz WebContainers to e2b — set up custom templates, API config, sandbox session management, and documented the environment.
- Worked on the Figma-to-code plugin — helped set up the codegen pipeline, multi-frame export, and tweakpane UI integration.
- Helped build the user onboarding flow with interactive checklist, task tooltips, and progress tracking.
- Contributed to the "make real" feature — added API route, response shapes, and integrated canvas drawings as chat attachments.