

Dhruv Tiwari

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SUMMARY

Software engineer specializing in **performance, developer platforms, and AI-powered tooling**. Experienced in building **internal platforms, agent-driven workflows, and high-impact product features** in fast-paced teams.

EXPERIENCE

- **Senior Software Engineer, Headout** *April 2025 - Current*
Hybrid, Bengaluru, India
 - Designed and built a custom **Model Context Protocol (MCP) Server** from scratch, creating the core infrastructure that enables **LLM-powered agents** to securely access design tokens, component libraries, and internal engineering rules as structured tools — driving widespread adoption of AI-assisted workflows across teams and **reducing development time by 80%**.
 - Led the development of a production-ready performance optimization POC that reduced **Total Blocking Time (TBT) by 55%**, **Main Thread Blocking time by 28%**, and **Time to Interactive (TTI) by 28%**, significantly improving performance and user experience.
 - Architected a comprehensive frontend **observability** system to collect **Core Web Vitals** across multiple applications, leveraging **Grafana** to build real-time performance dashboards and automated alerting, thereby reducing **mean-time-to-detection (MTTD)** for regressions.
 - Drove product trust and engagement by launching the **Pinned Reviews** feature across all frontend services, **boosting consumer confidence** and directly contributing to higher conversion rates (**38x increase** in interaction with reviews).
 - **Fixed critical memory leaks** in a NextJS project that were causing pod restarts, improving resilience and eliminating production instability.
 - **Modernized the CLI, developer tooling, and documentation** for an internal developer platform, streamlining setup and speeding feature delivery across teams for platform-related tasks.
- **Software Engineer, Headout** *June 2023 - March 2025*
Remote, India
 - Architected the frontend roadmap and implemented **experience itineraries**, integrating **Leaflet** for interactive mapping and **Google Maps APIs** for routes — **saving USD 7.8k annually**.
 - Increased **CDN cache hit ratio by 11%** through improved cache policies and **reduced CPU usage across pages by 87%**, significantly enhancing system efficiency.
 - Conducted and iterated on **numerous experiments**, including **dynamic product rankings** and multi-phase redesigns of product cards to enhance engagement and performance.
- **Student Contributor under Google Summer Of Code, Pluto.jl (Julia)** *May 2022 - October 2022*
Remote, India
 - Developed **PlutoDesktop**, an **ElectronJS + TypeScript app** that **automated Julia runtime setup, configuration, and background execution for Pluto.jl notebooks** — reducing onboarding overhead by **simplifying environment setup**, publishing a **public release**, and contributing **upstream** with documentation and a **technical blog**.

EDUCATION

- **Netaji Subhas University Of Technology** *August 2019 - August 2023*
Bachelor of Technology in Information Technology New Delhi, India
 - GPA: 8.21/10.00

PROJECTS

- **Isol8 - An isolated environment for AI agents to execute code.** *Docs, Github*
Tools: TypeScript, Docker, Turborepo, Bun
 - Designed and implemented a **high-performance system for executing untrusted code** within secure, isolated micro-containers.
 - Engineered a **custom orchestration layer** to manage container lifecycles, ensuring **low-latency execution and strict resource limits** for multi-tenant environments.
- **Maxions - One Shot E2E coding agents. inspired by Stripe Minions.** *Docs, Github*
Tools: TypeScript, NextJS, Bun
 - Architected an **unattended, one-shot AI coding agent platform** that autonomously implements, verifies, and ships pull requests via **sandboxed environments based on Isol8**.

TECHNICAL SKILLS

NextJS, ReactJS, TypeScript, JavaScript, NodeJS, ElectronJS, CI/CD, Web Performance, Golang, Python