

Ayush Singh

Full-Stack Developer · Systems Engineer · Open Source Contributor · Security Researcher
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Summary

Full-Stack and Systems Engineer shipping production ERP systems, multi-agent AI platforms, and blockchain security research. 60+ merged pull requests across the Swift Compiler, Rust (Boa), Jenkins, Screenpipe, and Python – every contribution self-identified, no assigned tickets. 2 confirmed vulnerability findings in the TON/Telegram blockchain contest (consensus-layer DoS). Strong in JavaScript, TypeScript, Python, Rust, C++17, React, Node.js, AWS, and Docker, with deep roots in compiler internals, distributed consensus (Raft/WAL), and CI/CD hardening.

Technical Skills

Languages JavaScript, TypeScript, Python, Java, C++17, SQL, Rust

Frontend React, Next.js, Tailwind CSS, Vite

Backend Node.js, Express.js, FastAPI, tRPC, REST APIs

Databases MongoDB, PostgreSQL, Redis

Cloud/DevOps AWS (Lambda, S3, SNS, Bedrock, SAM, EventBridge), Docker, CI/CD, Vercel, Git

Systems epoll, Write-Ahead Log, Raft Consensus, TLV Protocol, Compiler Internals, Miri

AI/Data Multi-agent systems, TensorFlow, scikit-learn, NumPy, BERT, TF-IDF

Experience

Full-Stack Developer & Product Engineer

Aug 2025 – Jun 2026

IDMS Infotech Pvt. Ltd., Thane, India (On-site)

- Architected and shipped a production multi-portal ERP – Employee, Admin, and Client portals – as the sole engineer; built on React, Node.js, Express.js, and MongoDB, owning DB schema, REST API layer, and responsive UI across all three live portals.
- Drove the full product lifecycle end-to-end: translating client requirements into technical architecture, defining API contracts, managing deployments, and owning all production incidents.

Freelance Full-Stack Developer

Oct 2024 – Jul 2025

Independent / Remote — 10+ clients

- Delivered full-stack web applications end-to-end for 10+ freelance clients across e-commerce, portfolio, and small-business CRM use cases, using React, Next.js, Node.js, and PostgreSQL.
- Owned the complete client lifecycle as sole developer on each engagement — requirements gathering, architecture, deployment, and post-launch support.

Open Source Contributions

60+ merged PRs across Swift, Rust, Java, Python, and systems tooling – every contribution self-identified, no assigned tickets.

Swift Compiler – swiftlang/swift

Feb 2026 | PR #87403

- Diagnosed and fixed a long-standing Swift compiler bug (#54422) by implementing a new property-wrapper diagnostic in TypeCheckPropertyWrapper.cpp; wrote a full regression test suite through multi-round core maintainer review – fix significant enough that a Swift core member filed a follow-up PR building directly on it.

Boa JavaScript Engine (Rust) – boa-dev

GSoC 2026 Org PRs #4699, #4669, #67, #62, #43, #16

- Eliminated native stack overflow crashes in the Boa VM by introducing a host call depth counter inside check_runtime_limits(); validated zero performance regression via A/B benchmarking, merged into v1.0.0 milestone.
- Extended boa_gc parity: Gc::ptr_eq helper (#62), drop-finalizer parity (#43), test coverage (#67), API model investigation docs for boa#2631 (#16).
- Hardened CI: enabled warnings-as-errors on main, added a nightly Miri UB-detection job, restructured boa_gc unit tests under mod miri.

Jenkins Core, AI Chatbot Plugin & Security Docs

PRs #26331, #287, #272, #270, #227, #198, #179

- Fixed Jenkins Core UTF-8 redirect bug (#26331); patched AI Chatbot plugin across 6 PRs – redacted raw chat payloads from logs (#198), fixed session persistence after file-upload replies (#179), restored persisted session objects on disk reload (#272), corrected run-datastorage path (#270), fixed malformed retriever prompt JSON (#227), enhanced plugin landing page (#287).
- Authored official Jenkins security docs on hasPermission + FormValidation.ok() – approved by 3 core maintainers; guidance directly led a maintainer to file a confirmed production security vulnerability.

Screenpipe – 18k stars | Rust / Tauri

PRs #2953, #2915, #2771, #2769, #2768, #2698, #2684 (7 merged)

- Shipped cross-platform sleep/wake detection on Windows and Linux (#2768); resolved windows_sys core dependency conflicts and Linux e2e openblas setup failures in CI (#2771).
- Fixed false daily usage-limit error on HTTP 429 responses (#2953); eliminated usage-tab count inflation across page refreshes (#2915); patched tauriFetch for localhost custom AI preset diagnostics (#2684).
- Removed unused base64 dependency from screenpipe-connect (#2769); suppressed repeated persistent capture warnings on unsupported Windows monitors (#2698).

Nao Labs CLI – YC S24 | Top 5 Contributor (500 stars) *Dec 2025 – Mar 2026 | PRs #382, #281, #170, #150*

- Shipped an AI annotation system enabling prompt() calls in Jinja templates with full multi-provider LLM support (OpenAI, Anthropic, Mistral, Gemini, Ollama) and an ai_summary accessor, with complete test coverage across all providers.
- Added Trino database connector with integration tests; built admin-protected version metadata API with Docker build-arg injection; eliminated false-negative test failures by fixing float comparison precision.

Security Research

TON/Telegram Blockchain Contest – Consensus-Layer Vulnerability Research *March 2026 | Prize pool up to \$100,000*

Submitted 20+ security reports targeting DoS and consensus-correctness attack vectors in the TON validator implementation. Two findings officially confirmed by contest judges:

- Memory DoS via duplicate replay (CONFIRMED) – Validator-session duplicate replay pins candidate lifetime with a forged future-round message, causing unbounded memory growth; no deduplication guard in the round-change path. (2026-03-26)
- Byzantine Response-Amplification DoS (CONFIRMED) – Validator-session downloadCandidate RPC lacks per-peer throttling or deduplication, enabling a byzantine node to force O(n) redundant downloads per round. (2026-03-27)

Projects

GetSoloDesk – AI-Powered Freelancer CRM

[Live](#)

Next.js | Node.js | PostgreSQL | AI Proposal Generation | Razorpay

- Solo-built and shipped an end-to-end AI-powered CRM for freelancers from concept to paying users – full frontend, backend, and AI layer designed and developed independently.
- Built an AI proposal generator that drafts personalized, high-converting pitches from a pasted job description in seconds, plus a visual pipeline, revenue analytics, and automated follow-up reminders across Upwork, Fiverr, and direct clients.
- Implemented tiered subscription billing via Razorpay (Starter/Pro plans) with secure webhook-driven plan activation; live on Product Hunt with active early-access users.

BrandPilot – Multi-Agent AI Marketing Platform

[Live](#) | [GitHub](#)

AWS Bedrock | Lambda | S3 | SNS | SAM | FastAPI | React | TypeScript

- Orchestrated 4 Amazon Nova Act browser agents (Competitor Scout, Review Guardian, Mention Tracker, Opportunity Hunter) running overnight on AWS, replacing a \$5,000/month marketing agency workflow.
- Fully serverless backend on Lambda + S3 + SNS + EventBridge; Nova 2 Lite synthesises all agent output into a weekly intelligence report auto-delivered by email. Deployed via AWS SAM – submitted to Amazon Nova AI Hackathon 2026.

Social Sherpa – LinkedIn Network Manager AI Agent

[GitHub](#) | [Demo](#)

React | Node.js | AI Agents | LinkedIn Automation

- Built an AI agent that autonomously manages LinkedIn connections, drafts and queues outreach messages, and triages incoming connection requests – every action staged for explicit user approval before sending.
- Designed a network-query interface letting users ask natural-language questions about their connections (e.g. "top contacts in supply chain") and surface targeted prospects.

Vignaharta – Real Estate Platform

[Live](#)

Next.js | Node.js | PostgreSQL | JWT Auth

- Built and deployed a full-stack real estate platform with a custom Admin CMS so non-technical staff can manage all listings without writing code – secured with JWT auth, route-level API protection, and PostgreSQL persistence.

Education

B.Tech in Information Technology | Major: Data Science

July 2022 – June 2026

Ramrao Adik Institute of Technology, DY Patil University – Mumbai, India

Achievements & Certifications

- HackerRank Software Engineer Certificate (2026) – Passed the official HackerRank SWE role certification.
- IBM AI for Everyone – edX (2024) – IBM-backed AI literacy and fundamentals certification.
- Hacktoberfest Top 10 Global Contributor (2024) – Ranked in the global top 10 open-source contributors worldwide.
- Software Project Competition – Top 3, DY Patil University (2025) – NLP + ML citation-placement system using BERT embeddings and TFIDF ranking.
- TON/Telegram Blockchain Contest (2026) – 2 confirmed consensus-layer DoS findings from 20+ submissions (prize pool up to \$100,000).