

# Bhaumik Singh

Full-Stack Software Engineer | Web, Android & Cloud Expert

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## SUMMARY

**Full-Stack Software Engineer** with production experience architecting **scalable, cloud-native systems** across web and Android platforms. Skilled in **end-to-end system design** — from **distributed microservices** and **RESTful/GraphQL APIs** to **CI/CD automation** and **real-time observability**.

## SKILLS

<b>Languages</b>	Java, Python, C++, Go, TypeScript, JavaScript, Kotlin, Dart, Bash
<b>Backend</b>	Node.js, Express.js, Flask, Django, ASP.Net, RESTful APIs, GraphQL, tRPC, WebSockets
<b>Frontend</b>	Next.js, React, React Native (Expo), Flutter, Jetpack Compose, Tailwind CSS, Vite
<b>Databases</b>	PostgreSQL, MongoDB, Redis, Firebase, Prisma ORM, Elasticsearch
<b>Cloud</b>	AWS (EC2, S3, Lambda, CloudFront, VPC), GCP/GKE, Docker, Kubernetes, Terraform, Serverless
<b>DevOps</b>	GitHub Actions, Jenkins, Blue-Green / Canary Deployments, Infrastructure as Code, Nginx
<b>Observability</b>	Prometheus, Grafana, ELK Stack, Performance Profiling, Log Aggregation
<b>Architecture</b>	Microservices, Event-Driven Architecture, System Design, Distributed Systems, SOLID, Agile/Scrum

## EXPERIENCE

### Karkhana, Gurugram

Jan 2025 – Present

SDE I

Full-time

- Architected and launched **Karkhana Hub**, a production-grade makerspace booking platform using **Next.js 16, tRPC, and MongoDB**, serving **2,000+ active users** with end-to-end machine rental and workshop workflows.
- Eliminated frontend-backend contract drift by designing a strict type-safe service layer with **TypeScript and tRPC** in a monorepo, reducing integration bugs by **90%**.
- Engineered a fault-tolerant payment pipeline with **Razorpay** and idempotent state transitions, achieving **100%** reconciliation accuracy and zero duplicate bookings in production.
- Reduced data-fetch latency by **53%** through strategic **Redis** caching on high-read dashboard queries, enabling responsive performance under concurrent load.
- Deployed a Dockerized CI/CD pipeline on **AWS (EC2, Lambda)** with **Prometheus** monitoring, achieving sub-minute incident detection and high-availability uptime.

## PROJECTS

### Multi-Tenant Machine Booking Platform

[Website](#)

Makerapp

- Architected a full-stack, multi-tenant booking platform using **Next.js 16, TypeScript, tRPC, Prisma, and MongoDB**, supporting machine rentals, lab onboarding, and workshop scheduling across Admin, Vendor, and User roles with role-based OAuth (Google/LinkedIn).
- Engineered transactional booking with **Razorpay**, **Redis**-cached dashboard queries, and containerized **AWS (EC2, S3, Lambda)** deployment via CI/CD with **Prometheus** observability — achieving 100% payment reconciliation and 53% latency reduction.

### Lightweight Security Guardian for Web Applications

[GitHub](#)

Mamoru-WAF

- Engineered a zero-dependency Web Application Firewall in **Go**, defending against OWASP Top 10 threats (SQLi, XSS, Path Traversal) with pattern-matched rule evaluation at wire speed.
- Built an interactive TUI with **Bubble Tea** delivering real-time traffic monitoring, event logging, and atomic live rule-reloading — zero dropped connections during configuration changes.

### High-Performance Background Job Processing

[GitHub](#)

Hakai

- Developed an ultra-fast, cross-platform background worker in **Rust** and **Bun** for high-throughput task execution and file-system operations at native speed.
- Designed a robust FFI bridge coupling Rust's safe concurrency model with Bun's JavaScript runtime, outperforming standard Node.js task runners in benchmark throughput.

### PowerShell TUI for System Optimization

[GitHub](#)

Winmole

- Built a graphical Terminal UI in **Go** and **PowerShell** that automates Windows system cleaning, update management, and network diagnostics from a single interface.
- Implemented safe-delete algorithms and privilege-escalation management, enabling unattended execution of administrative scripts without manual intervention.

## Gesture Navigation Extension for Chrome

[GitHub](#)

*TabiNeko*

- Engineered a Manifest V3 Chrome extension in **TypeScript** and **Bun** delivering fluid right-click mouse-gesture navigation with sub-frame latency recognition.
- Built a custom real-time canvas overlay and mathematical gesture-recognition engine handling directional tracking and circular movement detection for intuitive browser control.

## Multimodal Bug Context Engine

[GitHub](#)

*AI Feedbacks*

- Created a full-stack platform and Chrome Extension in **Next.js** that auto-captures DOM state, UI screenshots, and network errors at crash time — eliminating manual reproduction steps.
- Integrated **Google Gemini** multimodal AI to synthesize crash contexts into structured, developer-ready issue prompts with semantic search across historical reports.

## Private Serverless Family Photo Gallery

[GitHub](#)

*ShashinMori*

- Architected a cross-platform photo gallery using **Flutter + Riverpod** frontend and **Fastify + TypeScript** backend with Firebase OAuth, enabling secure uploads from legacy Pixel devices via **tus protocol** resumable uploads and **BullMQ** job queue workers.
- Achieved **0.3%** upload failure rate, **43%** database query reduction through **Redis** memoization, and sub-100ms page loads across web and Android via asynchronous Jimp-based image optimisation and staggered gallery rendering.

## Precision A–B Playback Controller

[GitHub](#)

*Spotify Looper*

- Architected a cross-platform Spotify playback controller in **Flutter + Riverpod** with millisecond-accurate A–B looping and secure **OAuth 2.0** Web API integration, sustaining >99% session reliability via automated token lifecycle management.
- Engineered a low-latency loop pipeline with **just\_audio**, optimising seek operations to sub-120ms glitch-free transitions while delivering a responsive Material 3 UI across Android and Web (PWA).

## Self-Hosted Deployment Platform on Android

[GitHub](#)

*MiniShinobi*

- Built a self-hosted deployment platform on a rooted Android device via **Termux**, featuring **GitHub OAuth**, real-time SSE build logs, Cloudflare Tunnel auto-provisioning, and a serialised build queue optimised for ARM hardware constraints.
- Engineered a zero-native-compilation backend with **Node.js, sql.js** (WebAssembly SQLite), and file-based sessions to bypass ARM incompatibilities, backed by **Nginx** reverse proxy and **PM2** process supervision for production-grade uptime.

## Privacy-First Link Shortener with MCP Server

[Live](#)

*Shortlinks*

- Built a full-stack link shortener in **Next.js** and **TypeScript** that strips tracking parameters (`utm_*`, `fbclid`, `gclid`, `igshid`, 30+ more) before storage, performs platform detection across 23 services, and serves 307 redirects backed by **Appwrite**.
- Shipped the same core engine across three interfaces — a website, a **REST API**, and a **Model Context Protocol (MCP) server** for AI agents — with SHA-256-hashed identity rate limiting (2 req/s) that never persists raw IP addresses.

## Private Cinema Streaming App for Google Drive

[Live](#)

*HikariPlay*

- Built a full-stack **Svelte 5 + SvelteKit** private cinema application in a **Turborepo** Bun monorepo — indexes a Google Drive folder recursively (custom `pLimit(6)` concurrency limiter), resolves poster art via a four-stage **AniList GraphQL** → **OMDb** → **Drive** → **placeholder** fallback with dual-layer caching (24h server in-memory Map + 30-day client **IndexedDB**), and byte-proxies video through the server for Range-request-aware streaming.
- Engineered a two-strategy stream resolver (**Drive API** `alt=media` key auth → **public /uc confirmation-HTML** fallback), a **Fuse.js** fuzzy-search gallery with **Svelte 5** `$state/$derived` runes, **GSAP 3 ScrollTrigger** landing-page animations, and a zero-server **localStorage** resume tracker — deployed as a **PWA** on **Cloud Run**.

## AI Virtual Try-On Plugin for WooCommerce

[GitHub](#)

*Tryon Modal*

- Built a WooCommerce plugin delivering in-page AI virtual try-on via **Google Gemini** multimodal API, compositing user photos with garment images through a category-aware prompt pipeline and persisting session history in a custom **MySQL** table.
- Engineered a security-hardened, HPOS-compatible **PHP** plugin with CSRF, SQLi prevention, and XSS escaping; paired with a zero-dependency **vanilla JS** modal featuring lazy-loading, drag-and-drop uploads, and in-modal Add to Cart.

## EDUCATION

### Institute of Technical Education & Research, SOA University

*Bhubaneswar, Odisha*

B.Tech — Computer Science & Engineering

**Relevant Coursework:** Data Structures & Algorithms • Operating Systems • Database Management Systems • Data Science • Machine Learning • Software Engineering •

## CERTIFICATIONS

### Cybersecurity Professional Specialization

Google *Completed* Aug 2024

<b>Automate Cybersecurity Tasks with Python</b>	Google	<i>Completed</i>	<b>Jun 2024</b>
<b>Tools of the Trade: Linux and SQL</b>	Google	<i>Completed</i>	<b>Mar 2024</b>
<b>Connect and Protect: Networks and Network Security</b>	Google	<i>Completed</i>	<b>Jan 2024</b>
<b>Google Analytics Certificate</b>	ULS Association	<i>Completed</i>	<b>Jan 2024</b>
<b>Frontend Certification Exam</b>	Codedamn	<i>Completed</i>	<b>Mar 2023</b>
<b>Android Mobile Application Development</b>	Meta	<i>Completed</i>	<b>Sep 2022</b>
<b>Architecting Google Compute Engine Specialization</b>	Google	<i>Completed</i>	<b>Sep 2022</b>
<b>Elastic Google Cloud Infrastructure: Scaling and Automation</b>	Coursera	<i>Completed</i>	<b>Sep 2022</b>
<b>Reliable Google Cloud Infrastructure: Design and Process</b>	Coursera	<i>Completed</i>	<b>Sep 2022</b>
<b>Essential Google Cloud Infrastructure: Core Services</b>	Coursera	<i>Completed</i>	<b>Sep 2022</b>
<b>GitHub Actions: CI/CD</b>	Codedamn	<i>Completed</i>	<b>Mar 2022</b>