

Suraj Shukla

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4+ years • Full Stack • Distributed Systems • Robotics

PROFESSIONAL EXPERIENCE

Divergent Classes, Software Engineer Created an agentic ad-management application to automate Divergent Classes' marketing campaigns.	Delhi, India
Bramer Private Limited, Co-founder & CTO - Led a cross-functional team of 6 across software, AI, electronics, and hardware on a \$300K (INR 3 crore) R&D program. - Built the founding product stack: cross-platform ground control station, an event-driven backend, and edge ML inference on embedded NVIDIA Jetson hardware. - Built a three-phase geospatial pipeline for a border infrastructure organization: pre-phase site planning from historical and satellite data, drone-collected field surveys during execution, and post-phase fusion into a predictive road-construction susceptibility model.	Delhi, India

PROJECTS

fabric <i>Rust, Tokio, Axum, TypeScript, React, MAVLink, Tauri 2, MapLibre, GitHub Actions</i> - Built a multi-drone ground control station from one Rust hub-core compiled to three runtimes via Cargo feature flags: headless server, Tauri 2 desktop, and Android. - Implemented the full MAVLink flight-ops surface, arming, takeoff, queued GOTO, waypoint missions, and 10 Hz offboard velocity control for manual flight, verified against ArduPilot and PX4 SITL. - Wrote a rAF-batched map renderer that interpolates 4 Hz telemetry into 60 fps marker motion with diffed DOM writes, keeping a full fleet smooth on one canvas. - Made it work with no internet: a disk-caching tile proxy on the hub and IndexedDB telemetry persistence with quota-aware pruning. - Layered safety guards into every command path: writes refused hub-side while armed, autopilot echo verified before a write is marked applied, and a 2 s stale-input watchdog that brakes the vehicle if the operator's stream stops.	<i>app.bramer.in</i>
Nirman <i>Construction ERP for site operations. Next.js 16, React 19, Prisma 7, PostgreSQL, LangGraph, Vercel AI SDK</i> - Interviewed engineers across 10+ departments on-site, each re-keying the same data into its own Excel sheet; replaced all of them with one Daily Progress Report (DPR) that updates every department's records automatically. - Modelled the construction contract as a versioned tree (tender, awarded contract, and later variations held side by side), so a bill raised months later is priced from the contract version that was live at the time. - Built role-based access control so each user sees and edits only what their role allows, and secured every action in the app against unauthorized access. - Built AI features that read project data alongside site weather, festivals, local & global news to flag risks, predict delays, and summarize progress, with every figure computed in code so the model explains numbers instead of inventing them.	<i>nirmanos.in</i>
Levr <i>Next.js 16, React 19, Vercel AI SDK, FastAPI, PostgreSQL, Meta Ads API, Cloud Run</i> - Built an agentic ad manager that crawls a company's site and social profiles to learn the business, then plans and runs campaigns from a single stated goal. - Ranks the company's own social posts by performance to auto-select the best one to promote, and renders every result as generative UI instead of text. - Guards every dollar spent: human approval before any budget or live-campaign change, pre-call rule validation, and isolated credentials per account. - Built on a platform-agnostic tool layer, with Meta live today and Google, X, and others plugging in as adapters.	<i>levr200ok.vercel.app github.com/beingglitch/levr</i>
Whisper <i>Rust, Tokio, Axum, Serde</i> - Built a git-style version control system for environment variables, with branching and merging to manage changes across environments. - Supports two sync modes: a centralized server for cloud-backed sharing, and a decentralized peer-to-peer mode that needs no server at all.	<i>crates.io/whisper github.com/beingglitch/whisper</i>
Lookup <i>Go - goroutines, context, channels</i> - Built a recursive DNS resolver from scratch, including binary protocol encoding/decoding over raw UDP, with no standard or third-party library used. - Queried multiple nameservers in parallel at each level of the delegation chain and raced them for the fastest response, using goroutines, channels, and context-based timeouts. - Distributed as both an importable Go module and a CLI package via go install.	<i>github.com/beingglitch/lookup</i>

SKILLS

Languages: Python, Js/Ts, Rust, Go, SQL
Frontend: React, Next.js, React Native, TanStack, Zustand, Tauri 2, TailwindCSS
Backend: Node.js, FastAPI, Axum, Tokio, REST, WebSocket, WebRTC
Data: PostgreSQL, PostGIS, MongoDB, Cassandra, Redis, Firebase, Prisma, SQLite
Cloud and Infrastructure: AWS, GCP, Docker, Nginx, Github Actions
Blockchain: Anchor, Solana
Machine Learning and Robotics: ROS, Gazebo, PyTorch, OpenCV, LangGraph, LangChain

LEADERSHIP & RESEARCH ROLES

I-Hub Foundation for Cobotics (IHFC), IIT Delhi, Research Fellow Selected for a competitive fellowship in collaborative robotics at IHFC, a Department of Science and Technology Innovation Hub at IIT Delhi to build a swarm-coordination system for multi-agent robotics.
DTU IoT Research Lab, Head of Development Leading a team of student developers across different research & development projects in computer vision, signal processing, software defined networks (SDN) & robotics applications.
DTU Unmanned Aerial Systems (UAS) Team, Software & Autonomy Lead Led the software and autonomy sub-team; developed a swarm-coordination framework for drones with GPS-denied visual navigation & action pipeline on ROS 2.

ONGOING RESEARCH

Neuromorphic Simultaneous Localization And Mapping (SLAM): Developing a Spiking Neural Network (SNN) based SLAM algorithm for low-energy, vision-only navigation on micro-swarm drones.
Subsurface Mapping: Ground-Penetrating Radar (GPR) signal processing and machine-learning segmentation of B-scan and C-scan data to reconstruct subsurface structures for non-invasive mapping.

EDUCATION

Delhi Technological University (DTU) <i>B.Tech in Software Engineering</i>	2022 to 2026 <i>Delhi, India</i>
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