Niskarsh Kumar *Senior Product Architect @Proof-of-Skill | IIT Kanpur*

✉ niskarshk@gmail.com 📞 +916386717156 ⦿ Github in LinkedIn ●◑ Medium ⓒ Calendly

🔗 https://niskarsh.github.io ✈ Telegram 📍 Bengaluru, Karnataka, India

Professional Experience

Senior Product Architect, *Proof-of-Skill protocol*   05/2024 – Present
                                                                          Bengaluru, Karnataka,
AI + Platform-scale Optimizations   India

- **Owned end-to-end product architecture** for a multi-service platform (Next.js + Express/Node, PostgreSQL/Redis + AWS + OpenAI/Gemini), setting coding standards, data models, and integration patterns across web, mobile, and backend.
- **Accelerated engineering with AI agents/tools**: **DevinAI** and **ChatGPT** for coding, validation, and docs; worked with **Jazzberry AI** for reviewing prs.
- **Implemented realtime voicebot for language evaluation:** used **OpenAI Realtime** (WebRTC streaming audio in/out) to handle turn-by-turn conversation and **language assignment**, then piped clips to **Gemini 2.0 Flash** for audio evaluation;
- **Phone calling agent for evaluations — Vapi AI + Twilio + Gemini 2.0 Flash (async):** Voice agent places/receives PSTN calls via Twilio; captured segments evaluated async; results fed back into app workflows.
- **Performance hardening of read models** (MV refresh + indexing): heavy cross-model requests reduced from >**9 s** → **<2 s** *worst case* (⩾**78%** faster), and to ~**1s** on average (⩾**89%** faster).
- **Designed the platform's unified logging architecture and oversaw adoption across all apps**: standardized **structured JSON logs**, consistent levels/fields, **request correlation/trace IDs** (OpenTelemetry-compatible), and centralized ingestion/retention; partnered with each team on roll-out, privacy (PII redaction/masking).
- **On-chain audit trail for platform actions — NEAR (Rust/WASM, NEP-297 events) + Monad (EVM/Solidity events):** Emitted standard NEAR **EVENT_JSON** logs and Solidity events for every action to create tamper-evident, queryable history (indexed off-chain for analytics/compliance).

Cloud Infra Implemetations

- **Robust live video streaming (screen & camera upload; survives page refresh/crashes) (for proctoring) — Amazon IVS + EventBridge + MediaConvert + Lambda + S3 + IAM** - Browser publisher via IVS Web Broadcast SDK (camera/screen-share) streams to IVS → IVS records to S3 as fragmented HLS playlist → IVS emits stream/recording events to EventBridge → Lambda for app updates → AWS MediaConvert job to convert HLS playlist → MP4;
- **Edge traffic split & routing for experiments — Cloudflare Workers (50/50 subdomain steering)** - Lightweight A/B routing at the edge to balance load and test experiences without origin changes.
- **Unified, PII-safe logging across apps — Lambda + ElastiCache (Redis) + S3 + IAM** - Built the logging architecture and oversaw adoption across web, serverless, and Android: structured JSON logs with correlation/trace IDs; Lambda fan-in and preprocessing; short-lived correlation/dedupe in Redis; durable archive to S3; IAM for least-privilege access.
- **Harden config & secrets — AWS Secrets Manager + IAM** - Moved credentials out of code/env; retrieve at runtime with least-privilege access.

Pilots & Experiments

- **Beckn partnership: verifiable credentials on-chain — Smart contracts (issuer/holder/verifier) aligned to W3C VC 2.0:** Built contracts to issue/verify VCs and mapped them to Beckn flows for interoperable discovery/transactions.
- **Referral tokenomics (10% reward) — Postgres + on/off-chain design + Monad(evm chain) plan:** Schema + boundaries for future on-chain issuance.

Back End Developer, *School of Accelerated Learning*   12/2019 – 05/2024

- Shipped backend services that powered **cohort creation, scheduling, and progress tracking**   Mumbai, Maharashtra,
  for multi-city, online/offline programs.   India
- **Built the assessment pipeline** (timed challenges, rubric storage, auto-scoring hooks) with
  idempotent job runners and retries/backoff; added result webhooks for real-time dashboards.
- **Selected tech:** Node.js/Express, PostgreSQL , Redis, REST/GraphQL, GitHub Actions,
  S3/CloudFront, Webhooks, Swagger.

Education

Indian Institute of Technology, Kanpur, *Bachelor of Technology, Materials Sciences*   2015 – 2019

Top Skills

AI Solutions, *OpenAI Realtime API, OpenAI API, Gemini 2.0 Flash, Vapi AI, DevinAI*

AWS Solutions, *S3, IVS, EventBridge, MediaConvert, SES, SQS, Elasticache, Lambda, AuroraDB, Cloudwatch, Route 53*

Blockchain Implementation, *NEAR (Rust/WASM), EVM/Solidity, W3C Verifiable Credentials*

Backend & Data, *Node.js, Express.js, Typescript, PostgreSQL, Materialized Views+Indexing, Sequelize ORM, Redis/ElastiCache*

Platform & Systems Architecture, *Event-Driven Architecture, CQRS & Read Models, Circuit Breaker & Rate Limiting, Microservices*

Publications

6 things I haven't done since ChatGPT, *Everyday AI | Medium* ⌖

Will I lose my job to AI?, *ILLUMINATION | Medium* ⌖

Hobbies

Singing | **Guitar** | **Go-karting** | **Video editing** | **Music production** | **Reading (fiction)** | **Trading**