Vinay Badhan

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📍 Bangalore, India   🔗 Github (personal)   🔗 Github (work)   Ⓜ Medium

Summary

Hands-on senior software engineer with deep experience in building robust, scalable, and cost-efficient backend systems. Led architecture and implementation of the developer assessment platform at HackerRank, enabling 10x growth and reduced cost per workspace by ~60%. Currently building the clinical trial study SaaS platform at Medable with automated workflows, which are a mix of deterministic and AI-assisted flows with human in the loop.

Skills

Programming Languages: 🐍 Python, GO Golang, 💎 Ruby, JS JavaScript / TS TypeScript
Frameworks: MCP, LangGraph, Google Agent Kit, Gin, FastAPI, ExpressJS, Ruby on Rails
Data: PostgreSQL, MySQL, Apache Hudi, Spark, pgvector, Neo4j
Infra: AWS, GCP, Docker, CI/CD, Terraform, ELK
Interests: Applied AI, Containers, Developer Platforms, Data Engineering, Engineering Management

Experience

Engineering Manager (Hands-on)   **Medable Inc.**   **June 2023 - Present**

Leading automated code generation and testing platform for clinical trial study building through LLM integration and fine tuning.

AI Platform

- Deployed AI-powered code generation agents leveraging **custom RAG** pipelines to auto-generate study extensions, tests, and deployments
- Developed **Office 365 MCP** and tool integration for agent studio integration
- Migrated from a custom agent engine to **Google's ADK**, significantly boosting system reliability and reducing maintenance effort.

Core Platform

- Architected self-serve platform enabling sponsors and CROs to independently build and validate studies
- Transformed clinical trial study setup from a 6-month manual process to under a week through end-to-end automation
- Worked with the professional services team to understand the domain and automate all the work with deterministic workflow development
- Reversed profit margins from **-90% to +40%** per study by eliminating manual bottlenecks
- USDM spec (JSON) standard implementation to be used as the source data for the entire self-serve platform
- Designed and developed a rule-based evaluation engine for sending context-aware notifications.
- Load tested all the service involved in the self serve platform and optimised servies
- Established and scaled India-based engineering team, hiring and mentoring 6 developers

Tech Lead   **HackerRank**   **June 2018 - June 2023**

IDE Infrastructure and Tooling

- Architected multi-cloud infrastructure spanning **AWS** and **GCP** based on VMs and containers with custom machine images and background processes (with auto-recovery) for exec and IDE
- Reduced workspace costs by **~60%** across frontend, backend, and data science environments by migrating to a VM-based IDE infrastructure.
- Delivered **~$1.5M** annual savings through strategic cloud resource optimization
- Built thin images and developed the framework to add stack specific packages to be used as machine images
- Scaled workspace concurrency **10x** while improving system reliability
- Migrated entire production traffic from older infrastructure to newer infrastructure within a month
- Designed a custom routing system and workspace architecture using Docker Compose
- Improved IDE launch-time SLA from 80% to 95% using an intelligent provisioning layer with warm-up strategies.
- Improved IDE-Editor launch SLA from 93% to 99.5% by building a new IDE-Management-Service in Golang.
- CDN integration for IDE assets to reduce the load time and improve candidate experience
- Spearheaded editor architecture and real-time collaboration features for data science assessments

Data team

- Engineered real-time data pipeline processing 60M+ annual submissions with near-instant insights
- Optimized Spark jobs, reducing computation time from 24 hours to under 2 minutes by garbage collection migration to G1GC and resource finetuning
- Implemented end-to-end observability with logging, alerting, and monitoring dashboards
- Unified schema data ingestion across interview scorecards, screening scores, challenges, and hackathon

Education

B.Eng. in Computer Science (SGSITS, Indore)   **June 2014 - April 2018**