

Bahul Neel Upadhyaya

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Professional Summary

Technology leader with extensive experience in software architecture and engineering, focusing on enterprise-scale solutions that improve business operations. Combines technical expertise with business understanding to deliver practical, effective solutions. Experienced in building and leading technical teams. Advocates for workplace neurodiversity, bringing different perspectives (ADHD diagnosed and pending ASD assessment) to problem-solving and innovation.

Professional Experience

Total Perspective Tech

Founder & Lead Developer *June 2023 – Present*

Exploring the intersection of emerging and forgotten concepts in software through open-source projects and long-form writing. Recent threads include relational data systems, type-level programming, and agent-native development methodology.

- Founded Total Perspective Tech as the home for open-source work and applied research.
- Seeded the RelationalFabric collective (Canon, Howard, Suss) — foundational TypeScript libraries for truly relational, data-centric systems.
- Built Agent Brain Trust — a reusable system of expert collectives that turns AI assistants into a room with friction, shipping as Cursor/Claude Code plugins and an MCP server.
- Published a sustained body of long-form writing on Level Up Coding spanning platform thinking, knowledge engineering, type-level programming, and AI-assisted development.

Undisclosed Client (under NDA)

Contract Developer/Architect *June 2024 – May 2026*

Architected and delivered a confidential platform from concept to launch-ready over a two-year engagement. The project is complete but unlaunched at the close of the contract; product, client, and implementation details remain under NDA. The engagement was the production proving ground for a distributed offline-first graph store, semantic data modelling, mouldable interfaces, and planning-oriented interaction design — patterns now published openly through RelationalFabric and related

writing.

- Implemented a distributed, offline-first graph store (DCSGS-variant architecture) nearing production readiness
- Pioneered early production exploration of relativistic UI/UX and mouldable interfaces — precursor to concepts published publicly
- Modelled domain data with a Schema.org-derived semantic layer for knowledge-engineering-oriented integration
- Replaced rigid sequential workflow gating with planning-based interaction chains: when a user attempts an action, the system surfaces prerequisite actions for completion rather than hard-blocking progress
- Delivered end-to-end using AI-assisted development practices, sustaining high delivery velocity across the engagement
- Executed an offline- and mobile-first product strategy across web and mobile surfaces
- Stood up cloud infrastructure on AWS sized for projected scalability requirements

Recent Roles

Hybr Ltd

Senior Full-stack Web Developer *June 2023 – May 2024*

- Developed comprehensive design system to improve development consistency
- Introduced semantic web architecture and knowledge engineering concepts to enhance internal modelling and data integration
- Improved platform performance and user experience through targeted updates

Contxt

Contract ML Architect and Senior Developer *August 2022 – February 2023*

- Guided team's architectural evolution from monolithic to pluggable multi-layer design supporting cross-platform deployment
- Developed synthetic data generation system for classifier testing
- Investigated language model applications for API content classification

Elsevier (RELX)

Data Platform Architect *September 2020 – August 2022*

- Provided architectural guidance for platform development and integration
- Facilitated collaboration between product and engineering teams to align technical capabilities with

product strategy

- Supported pharmaceutical company data-athon, enabling novel drug target discovery through platform integration

Earlier Career

- *August 2017 – June 2020* — **R&D Lead, Architecture Team / Senior Platform Architect**, Honeybee Solutions (Synchronoss Technologies Inc.)
- *April 2017 – July 2017* — **Independent Contractor**, Janrain Inc.
- *September 2013 – November 2016* — **Head of Research & Development**, Eckoh plc
- *January 2012 – August 2013* — **Senior Developer / Team Lead**, BraveNewTalent
- *June 2005 – January 2012* — **Senior Developer**, Eckoh plc
- *October 1999 – June 2005* — **Developer**, 365 Corporation plc / Eckoh plc

Technical Skills

Programming/Domain Specific Languages: C/C++, Clojure, ClojureScript, Datalog, Java, JavaScript (ES6), Node.js, Perl, PHP, Python, SPARQL, SQL, TypeScript.

Web and Markup Technologies: CCXML, CSS, GraphQL, HTML, JSX, Next.js, Pinia, Pug, React, Redux, Schema.org, Svelte 4, SVG, TailwindCSS, VoiceXML, Vue/Nuxt, Vuetify, WebRTC, WebWorkers.

Databases and Data Management: Datomic, ElasticSearch, FlureeDB, MongoDB, MySQL/MariaDB, Postgres, Redis.

Development and Deployment Tools: AWS, AWS API Gateway, AWS Cognito, AWS DynamoDB, AWS ECR, AWS ECS, AWS EKS, AWS Fargate, AWS Lambda, AWS S3, AWS SNS, AWS SQS, Chromatic, Docker, ESLint, GitHub Actions, Histoire, Kafka, Langium, N8N, NATS, RabbitMQ, SST (Ion), Storybook, Terraform, ZooKeeper.

Artificial Intelligence and Machine Learning: Agent Brain Trust, Agent-native architecture, Agentic AI/LLMs, AI planning (symbolic), ChatGPT, Claude.ai, Claude Code, Cursor.sh, Custom GPTs, DeepSeek, Dialectic prompting, Google Colab, Google Gemini, MCP (Model Context Protocol), NotebookLM, oLLAMA, OpenAI APIs, Perplexity, production-rule systems, Prompt Engineering, PyTorch, statistical methods, synthetic data generation, Tensorflow, Vector Symbolic Architectures, WebLLM.

Methodologies: Atomic Design, BDD, Design Systems, Domain-Driven Design, Kanban, Lean, SAFe, Scaled Agile, Scrum, TDD.

Architectures: Bloom / CALM, C4, Curry–Howard correspondence, data-driven architectures, Distributed architectures, event/streaming architectures, Lazy typing, micro-service architectures, Monotonic reasoning, propagator networks, Relational programming, serverless architectures, Stratified reasoning, Type-level programming, Value semantics.

Compliance: GDPR, PCI DSS.

Additional Tools: Figma, Notion, PostHog.

Knowledge Engineering: JSON-LD, OWL, RDF, Schema.org, Semantic Web.

Education

BSc in Physics — Imperial College London