

Arun Kumar Kulkarni

Senior Software Engineer — Backend & Full-Stack | .NET · React · API Engineering · Cloud

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PROFESSIONAL SUMMARY

Software engineer with 4 years of experience building production systems across the stack, currently delivering backend services and consumer-facing micro-frontends for a health, benefits, and claims platform covering FSA/HSA/HRA consumer-directed accounts. Ships end to end: ASP.NET Core microservices with Clean Architecture and CQRS, React 19 / TypeScript micro-frontends, load and contract testing, and validation through QA, UAT, and production. Consistently finds correctness, concurrency, and data-isolation defects before release rather than after. Azure-certified; independently designed, shipped and operates a full-stack web application in production.

PROFESSIONAL EXPERIENCE

Senior Software Engineer — Altimetrik India (Contractor — WEX Health)

Apr 2025 - Present

Modern Benefits Platform | Claims Web API & Consumer Claims Micro-Frontend | FSA/HSA/HRA Consumer-Directed Accounts

Claims Web API — ASP.NET Core, EF Core, MediatR/CQRS, SQL Server

- Designed and shipped a participant-facing claim filing-eligibility API to production, spanning controller, CQRS query handler, orchestration service, a side-effect-free rules engine, and a stored-procedure-backed settings repository, with a generated OpenAPI client for downstream consumers.
- Owned the technical analysis and estimates that shaped the migration epic, then implemented five-level configuration resolution with per-setting merge semantics, falling back from the most specific scope to global defaults with behavioural parity against the legacy implementation; scoped 4 of 7 eligibility checks out of the migration after establishing they were business-data reads that would have broken the service's bounded context.
- Diagnosed EF Core DbContext thread-safety failures under parallel execution and restructured the data-access path to sequence reads safely.
- Identified and fixed six behavioural divergences from the legacy implementation before raising the pull request — election-selection predicates, cancelled-transaction filtering, transaction-type eligibility, plan-year date clamping, and exception semantics — and locked the corrected behaviour in with regression tests; defended the design against a reviewer challenge with the underlying data-model rationale.
- Strengthened multi-tenant query scoping and added regression tests covering tenant-isolation boundaries, plus typed-exception handling so a missing upstream record degrades only the affected plan instead of failing the entire response.
- Hardened tenant-context propagation through the receipt-download and claim-filing paths so every data access resolves against the correct database shard, consolidating duplicate repository overloads in the process.
- Authored JMeter load tests at 75 concurrent users and 600 requests per minute: measured p95 of 3.3s and p99 of 4.2s across 4,061 samples at 0% errors against a 2s QA SLA, root-caused the regression to sequential per-plan iteration, and documented both a parallelisation path and a caller-side stopgap.
- Built test coverage across eight suites spanning service, engine, handler, controller, repository, stored-procedure, and model layers, plus consumer-driven contract tests.

Consumer Claims Micro-Frontend — React 19, TypeScript, Vite, Vitest

- Delivered the transfer-method experience to production in the consumer reimbursement flow, replacing a dedicated wizard step with a review-stage dialog for choosing direct deposit or check by mail, simplifying the payout path to a single confirmation surface.
- Integrated the bank-accounts BFF API including mailing-address retrieval and active/direct-deposit filtering, and reviewed the upstream GraphQL contract against micro-frontend requirements to flag gaps ahead of implementation.
- Built accessible radio-select cards with loading, empty, and error states aligned to design specifications, and shipped internationalized copy across 11 locales.
- Wrote a Vitest and React Testing Library suite covering selection behaviour, API states, and formatting helpers, and merged the feature through concurrent redesign work on the shared review flow.

Platform & Security

- Delivered HSA investment onboarding custom text end to end across two API layers: a GET endpoint in the legacy .NET Framework strangler service resolving employer-configured content through a cascading employer → administrator → business-party → default lookup, and a .NET Core BFF endpoint fronting it so the mobile client never calls the legacy service directly; designed the contract to accept an arbitrary set of text-type identifiers rather than hardcoding the two the feature required, and validated both layers in ReadyAPI.
- Remediated a critical cross-site scripting finding from a third-party penetration test across four legacy WCF services: because the standard ASP.NET Core encoders don't apply on that stack, built a custom JSON serialization layer with HTML escaping, a response-capture filter, and pipeline hooks consolidated into one shared library, shipped behind a feature flag for staged rollout and instant rollback.
- Analysed and documented API request/response contracts for the benefits mobile application; the resulting specifications became the basis on which the Android and iOS teams built dedicated native applications.
- Performed Splunk-based production triage on authentication failures in a card provisioning service, establishing through time-series and per-user analysis that they were client-lifecycle edge cases rather than a systemic fault.
- Validated all delivered work across QA, UAT, and production environments using ReadyAPI before and after release.

Project Engineer — Wipro Ltd (Client: FedEx Australia)

Jul 2022 - Apr 2025

Cross-Platform Mobile Engineer | Courier Express Platform

- Developed and maintained cross-platform mobile features for a courier and express logistics application using C#, .NET, Xamarin.Forms, and .NET MAUI with MVVM architecture and SQLite local persistence.
- Integrated RESTful APIs over HTTPS and analysed request/response contracts and application flows across the codebase to support feature delivery and defect investigation.
- Wrote and optimized SQL queries for data retrieval and reporting, reducing redundant database calls and improving application responsiveness.
- Performed unit testing and debugging across multiple app modules in an Agile/Scrum environment, resolving defects ahead of release.
- Recognized with the Panache Best Newcomer Award for independently resolving complex design-flow issues within two months of joining.

PROJECTS

RoutineIQ — Full-Stack Habit Tracker & Reflection App tryhabitflow.com • Built and deployed a production web application end to end using Next.js, Convex (serverless backend), Clerk (authentication), and Firebase (push notifications); hosted on Cloudflare and deployed via Vercel. • Implemented streak tracking, progress analytics, interactive Three.js visualisations, a Web Audio focus-sound generator, and offline support as an installable PWA; live on a custom domain.	2024 - Present
Lumen — Local-First Document Q&A API github.com/arunkumar-dot/rag-document-assistant • Built a retrieval-augmented document Q&A service in TypeScript on Hono: PDFs are extracted with unpdf, chunked, embedded through a locally hosted Ollama model, and stored in Supabase pgvector; queries retrieve the top matching chunks and stream the answer from a local llama3.1 model. • Ran embeddings and generation entirely on-device so documents never leave the host and no cloud LLM keys are required; constrained the system prompt to the retrieved context so the model refuses rather than speculates when retrieval returns nothing relevant.	2025
Distributed Hacker News Scraper github.com/arunkumar-dot/hn-scraper • Built a distributed ingestion pipeline in TypeScript using Hono, BullMQ, Redis, and PostgreSQL with Prisma, processing scraping jobs across a 50-worker pool with exponential-backoff retries, batched upserts, and a full-text search index.	2025

TECHNICAL SKILLS

Languages: C#, TypeScript, JavaScript, SQL (T-SQL), Python (learning)
Backend: ASP.NET Core, .NET Framework, Web API, WCF, Entity Framework Core, ADO.NET, GraphQL, Node.js, Hono
Frontend: React 19, Vite, Micro-Frontends, Next.js, Design Systems, i18n, Figma-to-Production
Architecture: Microservices, Clean Architecture, CQRS / MediatR, REST API Design, BFF & Strangler Fig Patterns, Multi-Tenant Data Isolation
Testing: xUnit, Moq, Vitest, React Testing Library, Contract Testing (Pact), Load Testing (JMeter), ReadyAPI, Regression Testing
Security: OAuth 2.0 / OIDC + PKCE, JWT, XSS Remediation, OWASP, Penetration Test Response
Databases: SQL Server, Stored Procedures, Query Optimization, Sharded / Multi-Tenant Contexts, PostgreSQL, Redis, pgvector, SQLite, Convex
Cloud & Tooling: Microsoft Azure, Azure DevOps, Git, Visual Studio, OpenAPI/NSwag, Splunk, Docker Compose, pnpm
Mobile: Xamarin.Forms, .NET MAUI, MVVM, Firebase
Practices: Agile/Scrum, Feature Flags, Load & Performance Analysis, Production Debugging, AI-assisted Development (Cursor, Augment)

EDUCATION, CERTIFICATIONS & ACHIEVEMENTS

B.Tech — Electronics and Communication Engineering, PES University • Microsoft Certified: Azure Fundamentals (AZ-900) • Panache Best Newcomer Award — Wipro (2022) Scouts & Guides Rashtrapati (President's) and Rajyapuraskar (Governor's) Awards	2019 - 2022
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