

Pham Quang Khai

Principal Software Engineer | AI Platform & Agentic Systems | Solution Architect

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Summary

Solution Architect and full-stack engineer with 9+ years of experience, including several years as Head of Technical Department. Core stack is **ASP.NET Core** and **React**, backed by **Roslyn** compiler work, microservices and cross-platform system design across banking, renewable energy, automotive and enterprise BPM. Architected a schema-driven code generation platform for enterprise .NET and React systems, cutting boilerplate and enforcing consistency across large codebases. Grew a bank's digital onboarding from 70,000 to 97,000 monthly applications and completion from 12% to 22%. Five consecutive AI hackathon wins, one leading to a strategic education-sector partnership.

Technical Skills

Solution Architecture & Technical Leadership

- Architecture decision records, ADDs, NFRs, SLAs, quality gates, technical policy checklists, solution assurance
- Legacy modernisation, microservices on cloud and on-premises, event-driven and distributed workflow systems
- Client discovery, technical presales, estimation, code review, refactoring strategy, workshops, mentoring

.NET & Backend Engineering

- **C#**, .NET 8, .NET Framework, ASP.NET Core, Kestrel, Minimal APIs, ABP, Blazor, WPF, WinForms, Avalonia
- **Roslyn** - AST and semantic analysis, source generators, contract synchronisation
- EF Core, Dapper, ADO.NET stored procedures, Sequelize, TypeORM, HostedService, Hangfire, Quartz, DevExpress
- Rust, Go, Java Spring Boot, Node.js, Python, PowerShell, Bash;DDD, CQRS, Vertical Slice, Clean/Onion, MVVM

AI Systems & Agentic Architecture

- **Semantic Kernel** orchestration, **MCP** server design, RAG pipelines, vector retrieval
- Guardrails and validation gates, eval design, provider-agnostic model layers, cost and turn limits

Cloud, Infrastructure & DevSecOps

- **Azure** (App Service, SQL, Aspire, AKS, Monitor, DevOps), **AWS** (EKS, Lambda, SNS/SQS, KMS, S3, ECR)
- Kubernetes, Docker, Harbor, ACR, ECR, Terraform, Ansible, Dapr, Istio, Kong, Traefik, Nx monorepo
- GitLab CI, GitHub Actions, Azure DevOps, Jenkins, Travis CI; OWASP, Veracode SAST/IAST, IAM, KMS, WAF, Nexus
- NGINX, Caddy, Apache, IIS, Ubuntu, CentOS, Windows Server, VMware ESXi, on-premises and hybrid operations

Frontend, Mobile & Desktop

- React, Next.js, Angular, Vue, Stencil.js, TypeScript, micro frontends, Module Federation, MUI, Ant Design, Tailwind
- React Native, Flutter, Kotlin, Swift, Unity, Tauri, Electron, Avalonia, low-code and BPMN 2.0 platform design

Data, Integration & Observability

- SQL Server, PostgreSQL, MySQL/MariaDB, Oracle, SQLite, MongoDB, Cosmos DB, Redis, Elasticsearch, Meilisearch
- REST, gRPC, GraphQL, WebSocket, SignalR, SSE, Kafka, RabbitMQ, Hazelcast, Azure Service Bus, AWS SNS/SQS
- xUnit, NUnit, Moq, Jest, JUnit, Mockito, Cucumber, Playwright, Maestro, Selenium, k6, JMeter, Datadog, New Relic

Professional Experience

AI Platform, Developer Tooling and Engineering Standards

Sep 2023 - Present

Principal Software Engineer / AI Champion, FPT Software

- Built an internal mobile engineering platform single-handedly: 525 commits, nine tagged releases and ~297K lines of Rust, Go, TypeScript and Objective-C in 102 days, at a 39.8% test-to-code ratio.
- Designed that platform's low-code runtime with bounded expression evaluation, SQL, MongoDB, HTTP and GraphQL connectors, approval flows, audit trails and role-aware **MCP** agent access for AI tooling.
- Won five of five international client AI hackathons with teams shipping applied AI into product: **Semantic Kernel** orchestration, RAG retrieval, MCP server building and Roslyn-driven code transformation.
- Serve as AI Champion and sit on AI Enable Delivery, the unit's AI capability group, driving adoption across a 54-person transformation programme spanning delivery integration, governance and training.
- Built a weighted evaluation scorecard benchmarking AI coding agents on speed, output quality, test coverage, completeness and autonomy against a live production React and TypeScript codebase.

Digital Mobile Onboarding and eKYC, Leading Philippine Bank

Dec 2024 - Present

Technical Leader / Solution Architect, FPT Software

- Grew monthly applications started from 70,000 to 97,000 and lifted completion from 12% to 22%, against a target of raising digital new-to-bank CASA acquisition from 8,400 to 21,000 per month.
- Led a ~140-person multi-squad delivery organisation across mobile, web, BFF, identity, security, data, QA and multiple external vendors, resolving cyclic dependencies in a highly regulated banking domain.
- Architected secure in-app eKYC and a Member-Get-Member referral system letting existing customers generate codes for new users, on Java Spring WebFlux, React Native, GraphQL and MongoDB Atlas.
- Introduced configurable product lists and eligibility definitions inside the onboarding workflow, allowing business rules to change dynamically without hard-coded flow changes or redeployment.
- Established security controls and operational visibility with Kong, Istio, ForgeRock and SailPoint IAM, Cloudflare WAF, AWS KMS, Veracode SAST/IAST, Datadog, and Terraform and Ansible-managed infrastructure.
- Converted delivery credibility on eKYC into a commercial account expansion, contributing to a won digital-payroll engagement now running as a separate ten-month programme for the same bank.

Legacy CRM Modernisation, Australian Automotive Group

Mar 2025 - Sep 2025

Solution Architect / Technical Lead, FPT Software

- Led migration of a legacy Delphi desktop product to a modern .NET 8 web application, improving performance, reliability and maintainability while retaining trust with the client's largest dealer account.
- Designed a Domain-Driven Design and CQRS backend for scalability and robust domain logic, guiding the product's evolution from a lead management tool toward a broader dealer CRM capability.
- Orchestrated React micro frontends for modular deployment and independent scaling, and enabled dealers to self-serve finance rate changes, scoring and display configuration without engineering involvement.
- Improved root-cause analysis and proactive health management with New Relic, and established automated build, test and deployment pipelines on GitHub Actions across SQL Server, MongoDB and AWS SNS/SQS.

Near-Real-Time Data Platform, European Renewable Energy

Apr 2024 - Jan 2025

Solution Architect, FPT Deutschland GmbH

- Designed scalable ingestion and reporting APIs for a mission-critical platform processing large-scale renewable energy data from multiple sources on .NET 8, .NET Aspire, Azure SQL and Kubernetes.
- Diagnosed and resolved production bottlenecks including SQL connection-pool exhaustion and sustained high CPU usage, then weighed Azure Hyperscale against application-level optimisation with stakeholders.
- Optimised Databricks housekeeping jobs through partitioning and resource-consumption analysis, cutting execution time, and centralised telemetry and caching to reduce cross-cutting boilerplate.
- Corrected turbine data-infilling anomalies distorting wind-speed and power reporting on a companion Java 8 platform, replacing nearest-wind-park selection with proximity-aware distance sorting.

Cloud-Native Inventory and Auction Platform, Automotive Sector

Jan 2024 - Dec 2024

Solution Architect, FPT Software

- Delivered a vehicle inventory and auction-integration platform for independent dealers inside a highly autonomous team operating without conventional business analyst, architect or project manager roles.
- Designed cloud-native integration using serverless processing, event messaging and infrastructure as code on ASP.NET Core 8, AWS Lambda, SNS/SQS, Terraform, Stencil.js and PostgreSQL.

Engineering Framework and DevStudio

Sep 2023 - Dec 2023

Senior Developer, FPT Software

- Contributed to FHM.FW, a proprietary framework central to company strategy, standardising .NET and Java project foundations and reported to cut setup effort for large-scale projects by up to 80%.
- Worked across both .NET Core and Java Spring Boot foundations with React micro frontends on AWS, and was recognised as Best Rookie of the Year within two months of joining the company.

Technical Department Leadership and Low-Code BPM Platform Modernisation

May 2022 - Sep 2023

Head of Technical Department, HAHAO JSC

- Led and grew the development department through workshops, structured training and regular innovation sessions that surfaced emerging technologies and shaped technical direction across the company.
- Led revival of a legacy ASP.NET Framework and Silverlight product into a low-code BPM engine on ASP.NET Core 6 and Next.js SSR, adding BPMN 2.0 authoring, microservices, plugin architecture and Dapr.

- Orchestrated the research cycle from inception to execution, standing up PoC and MVP environments, assessing team skill gaps and promoting agile practice for cross-functional delivery.
- Owned architecture design documents, guidelines, technical policy checklists and SLAs, designed secure API services to OWASP standards, and ran code reviews with refactoring guidance each phase.
- Directed a 15-person React and TypeScript team delivering a digital signature platform for THACO Group, using the in-house low-code platform as Backend as a Service with a single backend developer.
- Delivered an integrated business management platform spanning e-office, task management, HRM and document management, and represented the company with the THACO, Dong Tam, Hoa Sen and Mai Linh groups.

Real-Time Game Backends and Streaming Infrastructure

May 2019 - Apr 2022

Lead Developer / Team Leader, BCO Studio

- Led migration of a Java game server to .NET 5 and later .NET 6 on a low-latency stack of NetCoreServer, ADO.NET stored procedures, RabbitMQ and Redis, persuading ownership to fund the rewrite.
- Rebuilt the administration platform on ASP.NET Core, Kestrel, EF Core and React with TypeScript, and maintained multiplayer game logic connecting Unity WebGL clients to Java backends over WebSockets.
- Selected a low-latency architecture and rebuilt account services, admin tooling, caching and third-party integrations, moving the message queue to RabbitMQ and standardising Redis-backed caching.

Real-Time Livestream and Web Infrastructure

May 2017 - Apr 2019

Lead Developer / Architect

- Designed and built a real-time livestream server integrating Node.js, an FFmpeg wrapper, NGINX RTMP, Redis and Socket.IO into WordPress as a plugin, owning architecture through to production support.
- Handled encoding, low-latency delivery, caching and Playwright-based browser automation for content ingestion, then maintained the system in production across coding, debugging and performance work.

Independent R&D and Open Source

- **Nolopro Engine** - Independent research into schema-bounded LLM integration and deterministic code generation: model output is constrained to a validated schema representation behind validation gates, with Roslyn AST synchronisation that preserves human-authored code. Full high-level design available on request.
- **Learn-Frida** - English-language Unity/IL2CPP and Android instrumentation guide covering Frida Server and Gadget, APK patching, native modules and function interception. ~250 stars, 40+ forks, international readership.

Education

Bachelor of Engineering, Information Technology
University of Transport, Ho Chi Minh City, Vietnam

2016 - 2021

Certifications & Recognition

- **Claude Certified Architect, Foundations**, Anthropic (2026). **GitHub Copilot Certification**, Microsoft (2026). **Microsoft PL-900**, Power Platform Fundamentals. **NVIDIA Transformer-Based NLP and AI on Jetson Nano**.
- **Named to the AKAT unit organisation chart two consecutive years** - one of six engineers selected to Center of Gravity (2025) and to AI Enable Delivery (2026), the unit's AI capability group.
- **FPT Europe Solution Architect** - selected for an offshore development centre after previous senior candidates did not pass the client interview. **FPT Solution Architect**, CTO-led internal certification.
- **FPT Software Top 100 nominee**, 2023 and 2025. **Best Rookie of the Year**, 2024. FHM Best Performance, FPT Stars and FPT TalentSphere for mentoring, 2025. Great Job award, FPT Software.
- **Languages**: Vietnamese (native), English (full professional proficiency, TOEIC 900, EnglishScore certified).

Additional Information

- Agile Scrum and plan-driven delivery, DevOps configuration and release management, technical training, architecture workshops and engineering policy development across onshore and offshore teams.
- Co-founded a game studio covering product engineering, backend, web, mobile, Unity, DevOps, security, digital marketing and SEO in a resource-constrained environment.