Domain-First architecture for fintech

Personal Information

Name / Surname	**Adrian Kremblewski**
Address	Cracow, Poland — Remote / Worldwide
Telephone	+48 603 193 295
Professional email	adrian.kremblewski@codefreeze.dev
Home page	codefreeze.dev
LinkedIn	linkedin.com/in/adriankremblewski

Summary

Domain-First solution architect for fintech & banking. 15+ years in regulated financial services — investment banking, wealth management, payments (PSD2 / Open Banking), core banking and digital identity. Owns architecture end-to-end — from greenfield platform design to event-driven microservices on Azure / AKS.

I keep the business model legible while frameworks, regulation and AI agents change underneath it. DDD made executable: the domain is a tree of versioned Java interfaces (ports and adapters), concrete technology kept at the leaves — so legacy modernization becomes a contained, countable swap, not a rewrite.

AI-safe by construction: a versioned, compilable domain becomes the agent's contract, keeping AI-assisted development inside bounded contexts instead of drifting the model.

Founder & Principal Architect at Codefreeze and author of the Domain-First Rules.

Technical Knowledge

Backend	Java 25, Spring Boot (Cloud Stream, Security, Data), Hibernate, Resilience4j, REST, Python, Bash
Frontend	React, jQuery, Bootstrap, HTML/CSS, JavaScript
Testing	Spock, Cucumber BDD, WireMock, REST Assured, Spring Cloud Contract, JUnit, Mockito
Cloud	Azure (AKS, Event Hubs, Cosmos DB, Blob Storage, Entra ID, App Insights), AWS (EC2, S3, IAM, VPC)
CI/CD	GitLab CI, Jenkins, Terraform, Maven, Docker, Kubernetes (AKS), Helm
Databases	Cosmos DB, Oracle, PostgreSQL, MongoDB, Neo4j
Monitoring	LGTM, Application Insights (KQL), Splunk, Dynatrace
Version Control	Git, GitLab, Bitbucket, GitHub
AI-assisted dev	Claude Code, GitHub Copilot — agentic coding inside DDD boundaries
Architecture & Methods	Software and Solution Architecture, DDD, Hexagonal & Event-Driven Architecture, Microservices, Clean Architecture, SOLID, TDD, CI/CD, SDLC

Working Style

- Architecture decisions backed by explicit trade-off analysis — rationale documented and reviewable
- Technical due diligence across code, domain and delivery
- Translates architecture trade-offs into business language for non-technical stakeholders
- Knowledge transfer and mentoring, so the team owns and maintains the result
- Direct communication — surfaces risks and trade-offs early, even when unwelcome

Reference Architectures

Project Name — **Domain-First Private Cloud**

Role — Solution Architect, Developer

- Single-node Proxmox homelab fully managed with Terragrunt, structured in three IaC layers: environments (compositions), services and reusable modules.
- Layered VM image preparation: base OS image, Docker-enabled template, service-specific cloud-init injection — immutable and composable provisioning.
- Vault PKI hierarchy (Root CA, intermediate CAs per service, server and client roles) with mTLS enforced across all services.
- Terraform fully decoupled from credentials — Vault AppRole and JWT auth, secrets resolved at runtime via Vault Agent.
- Phase-based bare-metal bootstrap automation with health checks, rollback and idempotent deployment scripts.

Technology — Terraform, Terragrunt, Proxmox VE, Vault, Consul, Nomad, Traefik, MinIO, Gitlab Pipelines, Nexus, LGTM, Kafka, Cloud-init, ZFS, Docker, Bash

Description — AI-driven homelab IaC with zero-trust networking, layered encapsulation and dependency injection via Terragrunt outputs.

Project Name — **Domain-First On-Chain Transactions Analytics**

Role — Software Architect, Developer

- Pure domain module defines behavioral interfaces; each infrastructure module implements them independently with its own technology concerns.
- Multi-module architecture with strict downward-only dependencies — each module encapsulates a single layer: domain, graph persistence, blockchain integration, REST API, composition root.
- Rich aggregate model with self-persistence, strategy-based transaction classification, factory-pattern object creation and domain event orchestration.
- Chain-agnostic parent library with universal blockchain interfaces — eth-node is one chain-specific implementation.
- Reactive pipeline with backpressure handling from live blockchain subscription through batch graph persistence to streaming REST API.

Technology — Java 25, Spring Boot, Spring WebFlux, Project Reactor, Neo4j, Web3j, Maven

Description — DDD blockchain analyzer built on interface-driven architecture with self-persisting aggregates and reactive event-driven processing.

Platform Proposal

Blueprint — **Domain-First Platform — On-Prem ↔ AWS / Azure / GCP**

Role — Cloud Platform Architect

Engagement — Designed to tailor and implement — on-prem, any cloud, or repatriation back

- Same three-layer Terragrunt IaC (environments / services / reusable modules) — going either direction retargets only the provider modules; compositions stay invariant.
- Complete SDLC platform — CI/CD, artifact registry, secrets/PKI, service mesh, observability — portable across on-prem and the three hyperscalers.
- Vault PKI hierarchy with mTLS — cloud KMS + workload identity (Entra ID / IAM / Workload Identity) or on-prem Vault.
- Phase-based bootstrap with health checks, rollback and idempotent deploys — portable across on-prem and the three hyperscalers.

Technology — Terraform, Terragrunt, Proxmox / bare-metal, AKS / EKS / GKE, Vault, Cloud KMS, Consul (service mesh), Nomad, Traefik / Gateway API, OpenTelemetry, LGTM (Grafana), GitLab CI, OIDC / Workload Identity, Helm, Docker

Description — A portable platform proven on-prem, designed to move either way — same architecture, only the provider modules retargeted. On-prem to cloud, cloud to on-prem, or hybrid.

Experience

2022 – today

Codefreeze — Founder & Principal Architect

- Domain-First software architecture studio for fintech — Architecture Reviews, DDD adoption, legacy modernization, AI-supervised delivery; one client at a time.
- Author of the Domain-First Rules; reference platform with a versioned central domain, domain-segregated MCP and layered IaC (Proxmox, Vault, Nomad, Consul).
- Delivered into the client's repository, with no lock-in.

04.2023 – 04.2026

UBS via Caspian One — Senior Software Engineer

Project Name

ACES

- Owned end-to-end software architecture of a greenfield platform designed from scratch — domain model, service boundaries and Azure topology.
- Event-driven microservices processing financial asset eligibility across multiple business domains.
- Azure integration: Event Hubs with manual checkpointing, Cosmos DB with optimistic concurrency, Blob Storage for streaming and distributed locking.
- Domain-First Hexagonal architecture with generic store abstractions and workflow orchestration using Aggregates.
- Secure API communication: OAuth2 with per provider customizations.
- Terraform IaC for Azure resources, Helm-based deployments to AKS, GitLab CI/CD with SonarQube and Fortify scanning.
- Multi-layer testing: Spock unit tests, Cucumber BDD acceptance, WireMock, Spring Cloud Contract.

Technology

Java 17–25, Spring Boot 3.4, Spring Cloud Stream, Cosmos DB, Azure Event Hubs, AKS, Terraform, Helm, GitLab CI, Spock, Cucumber, Docker

Description

Greenfield cloud-native platform for financial asset eligibility assessment and workflow orchestration, coordinating events across multiple business domains with distributed state management.

09.2020 – 03.2023

Capital Group via Luxoft — Senior Software Engineer

Project Name

RTM

- Led legacy modernization: monolith-to-microservices decomposition (architecture design and domain analysis).
- Drove cloud migration: re-architected CI/CD (Bamboo limitations analysis, Jenkins adoption) to enable the to-cloud move.
- Promoted DDD architecture across the team.
- Custom API cache design and implementation to avoid unnecessary calls for already cached data.
- API design and integration, exposed to UI and other BE components.
- Performance analysis participation prior each release. According to results, optimize application behavior to satisfy predefined expectations.
- Working close with business and supporting teams on daily basis to deliver new features.
- Release and production support.

Technology

Spring, Hibernate, Oracle, Angular

Description

Platform for asset ratings management.

06.2020 – 08.2020

HSBC via Vertex — Senior Software Engineer

Project Name

DIVA

- Frontend accessibility fixes and layout adjustment.
- Backend improvements.
- Increasing test coverage.

Technology

Spring, AWS (Lambda, DynamoDB, CloudFormation, S3), REST, ReactJS, Spock

Description

Platform for digital identity validation and authentication.

10.2019 – 05.2020

Sabre via Intive **— Team Lead Software Engineer**

Project Name

AVRO

- Frontend development in case UI-devs were absent.
- Backend development on daily basis.
- Mongo data series fixing.
- Bash tools to help data processing like JSON transformation or CSV extraction.
- Application maintenance.

Technology

J2EE, Spring (Core, WebServices, Security), JS, TeamCity, AWS, SOAP, REST, AngularJS, Spock, Camel, JMS, MongoDB

Description

Platform for revenue optimization.

12.2018 – 09.2019

Crif via Intive **— Software Development Manager**

Project Name

bONE

- Leading of 12 members DevTeam
- Requirements collection and clarification
- Backlog organization
- Sprint scope planning
- Sprint management – current tasks, future tasks, keep work ongoing
- Tasks definition – usually with business
- Release planning and management – dates, scope, deployments, requirements, dependencies
- Team management on members level – capacity, forecasting, holidays, hardware, taking care about good team spirit, etc.
- Team management on project level – resolving dependencies with other teams, planning and delivering work for other teams, production incidents handling
- Blockers/problems solving – member/team/business levels
- Meetings planning and coordination
- Taking care about relations and improving cooperation with Customer Care and Business side
- High level view on system architecture
- Developers consulting

Technology

J2EE, Spring (Core, WebServices), JavaScript, GWT, neo4j, Tomcat, Jenkins, Kubernetes, Docker, SOAP, REST

Description

Platform for financial verification of private and corporate customers.

07.2018 – 11.2018

A+E via Intive **— Data Engineer / Software Engineer**

Project Name

Mobile & Web

- Data analysis
- Searching for data discrepancies and root causes of data issues on lower level - debugging, logs analysis, etc.

Technology

Python, PHP, Databricks, AWS

Description

VOD platform for mobile devices.

02.2018 – 07.2018

Intive internal — Software Architect / Team Leader

Project Name

OKAPI PolishAPI

- Technology decision maker person
- Technical support during sales meeting
- Product presentation to the business

Technology

J2EE, REST, Spring (Core, WebServices, Data, Security), Tomcat, Jenkins, K8s, Docker, Azure Cloud

Description

European Payment Service Directive (PSD2) forces banks to use public APIs. Our platform provides security, monitoring, load balancing and scalability for Banks or Payment providers like PayU or PayPal.

10.2016 – 03.2018

TomTom via Intive **— Software Engineer / Scrum Master**

Project Name

Regression Test Tool (12 mo)

- Frontend and backend development
- Build and deployment process development
- AWS Cloud maintenance

Technology J2EE, Spring (Core, Batch, WebServices, Data), Hibernate, JavaScript, npm, Webpack, SASS, Tomcat, Jenkins, AWS

Description Compares two versions of map engine and calculates various statistics. Results tell either new version is good enough for prod release or not.

Project Name

User Response Collector (3 mo)

- Frontend development
- Build and deployment process development
- AWS Cloud maintenance

Technology TomTom Maps API, Spring (Core, WebServices, Data), JavaScript, npm, Webpack, SASS, Tomcat, Jenkins, AWS

Description Allows users to chose desired, best search result from search query. Tool used for gathering so called Ground Truth.

Project Name

H2O Shim (3 mo)

- Backend development
- Build and deployment process development
- AWS Cloud maintenance

Technology J2EE, Spring (Core, WebServices), Tomcat, Jenkins, AWS

Description H2OShim — a so-called shim. Some kind of proxy built on the top of an old system (API) which redirects requests to new version of API. Allows to terminate old one and maintain only new one. Transparently for a client.

Project Name

Dynamic Data Provider (3 mo)

- Frontend and backend development
- Build and deployment process development
- External APIs integration
- AWS Cloud maintenance

Technology TomTom Maps API, J2EE, JavaScript, npm, Webpack, SASS, Spring Spring (Core, WebServices), Tomcat, Jenkins, AWS

Description Enriches search results with additional data like EV Stations, TripAdvisor ratings, etc.

05.2015 – 09.2016

UBS via Luxoft **— Software Engineer**

Project Name

Advisory Data Distribution Platform (10 mo)

Technology J2EE, Spring, Hibernate, Apache CXF, JAX-RS, Oracle DB, Tomcat

Description Backend component for caching, processing, validating and exposing client data to another components. I was responsible for delivering new functionalities and production support.

Project Name

Orders exchange - Trading Platform (4 mo)

Technology Node.js, CasperJS, AngularJS, Gulp, Bower

Description Tool for front-end testing automation. Results were compared between old and new version of developed system. I was responsible for design and implementation from scratch.

08.2011 – 04.2015

CoreLogic via Software Mind — Software Engineer II

Project Name

OneWorkflow (26 mo)

- Views and Controllers development and support
- UI performance optimization
- Developing new features on all layers of application
- GWT and JSF (RichFaces) integration implementation and support
- End-to-end profiling and applying improvements

Technology GWT, JSF, RichFaces, jQuery, J2EE, Spring, Hibernate, JBPM, JAX-WS, JAX-RS, Oracle DB, Jboss, Tomcat

Description At the beginning I was a UI developer. With time I was chosen to write also backend and "end-to-end" functionalities.

I had an occasion to be involved in calls with the client about environments checking and which items should be done during moving data center between two locations.

I was also responsible for UI performance and application profiling.

Project Name

OneView (9 mo)

- Views and Controllers development and support
- UI performance optimization

Technology JSF, RichFaces, jQuery, J2EE, Spring, Hibernate, JAX-WS, Oracle DB, WebLogic, Jboss

Description Application for aggregation data from several web services. I was assigned as a UI developer. I was responsible for delivering front-end parts of new functionalities.

Project Name

R3 Workflow (10 mo)

- Views and Controllers development and support

Technology JSF, RichFaces, jQuery, J2EE, Spring, Hibernate, Oracle DB, WebLogic, Jboss

Description Workflow application for business process management. In this project I was also assigned as a UI developer, but this time I had an occasion to write some part of back-end parts of application.

09.2008 – 03.2009

BlueSoft — Junior Java Developer

- Debugging, logs analysis, code analysis and refactoring

Education and training

2006 – 2011

AGH University of Science and Technology in Cracow

Specialization Applied Computer Science

Faculty Physics and Applied Computer Science

Thesis topics Level I degree: Developing a database application with Hibernate

Level II degree: Additional modules to Grading Student Support System (plagiarism detection, compilation/running, rating, sharing materials for students)

Key subjects

- Databases,
- Computer Networks,
- Team Programming,
- Software Engineering,
- Formal Languages and Automata,
- Object-Oriented, Parallel and Distributed Programming,
- Advanced Web Techniques,
- Images processing and Analysis,
- Electronics,
- Computer Graphics and Visualization,
- Numerical Recipes

2003 – 2006

High School in Jastrzębie-Zdrój

Profile IT and mathematical

Other languages

Self-assessment
European level(*)

english

Understanding		Speaking		Writing
Listening	Reading	Spoken interaction	Spoken production	
C1 Proficient user	C1 Proficient user	C1 Proficient user	C1 Proficient user	C1 Proficient user

(*) *Common European Framework of Reference* (CEF) level

Additional information

Driver license

Category: A, B

Interests

Domain-Driven Design, AI-assisted development workflows, self-hosted infrastructure (homelab), photography.

I hereby give consent for my personal data included in my application to be processed for the purposes of the recruitment process under the European Parliament's and Council of the European Union Regulation on the Protection of Natural Persons as of 27 April 2016, with regard to the processing of personal data and on the free movement of such data, and repealing Directive 95/46/EC (Data Protection Directive)