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INDUSTRY EXPERTISE

Banking, IOT, Government & Research, Business IT/Services

TOOLS & SKILLS

AI Architecture & Enterprise AI Expertise

Agentic AI & LLM Orchestration:

LangChain, LangChain4j, Semantic Kernel, Azure OpenAI, Ollama

Enterprise Knowledge Systems: RAG,

Vector Stores, Azure Cognitive Search, Elasticsearch

AI Model Evaluation & Integration:

Prompt Engineering, Embeddings, Token Streaming

Azure AI Services: Azure OpenAI,

Cognitive Services, Azure ML

Architecture Patterns: Multi-agent

systems, Event-driven AI pipelines

Ethical & Secure AI Design: GDPR,

RBAC, Azure Entra ID

PoCs & Prototypes: Intelligent

automation, semantic search, agentic orchestration

Architecture & Design

Patterns: Microservices, Event-Driven Architecture, Domain-Driven Design (DDD), API Gateway

Principles: Cloud-native, Zero-Trust Resilience, Scalability, Observability

Modelling Tools: ArchiMate, C4Model,

Lucidchart, PlantUML

DevOps & Cloud Platforms

Cloud Platforms: Azure, AWS

CI/CD Tools: Azure DevOps, GitHub

Actions, GitLab CI/CD, Jenkins

Infrastructure as Code (IaC):

Terraform, Bicep

Containerization & Orchestration

Docker, Kubernetes (AKS, EKS, GKE), OpenShift

Release Strategies:

Canary, Blue-Green, Feature Flags

DEEPAK HIREN WAL

Solution Architect | Cloud-Native, DevOps Architecture & Agentic AI Expert

12+ years in Dev & DevOps | 3 years as Solution Architect

Strategic and hands-on AI & Cloud-Native Solution Architect with 12+ years in software development and DevOps, including **3+ years** leading **cloud-native** architecture focused on **Agentic AI, LLM Orchestration, and Enterprise knowledge systems**. Proven ability to design resilient, scalable, secure, **cloud-native** and **AI-enabled** systems using **Azure AI services, vector databases, and semantic search**. Skilled in building **AI-driven backend architecture**, leveraging LLMs, embeddings, and orchestration frameworks to enhance system intelligence, streamline operations, and improve reliability across data workflows and infrastructure. Passionate about **cloud-native innovation** and **intelligent systems**, with a collaborative and growth-oriented mindset, **mentoring teams** and continuously evolving my skills to driving excellence through **PoVs, PoCs**, reference architectures, and enterprise-scale implementations.

EXPERIENCE

SOLUTION ARCHITECT | TRANSACTION SERVICES, ABN AMRO BANK AMSTERDAM | SENIOR CONSULTANT CGI, NETHERLANDS | 05/24 – PRESENT

Key Responsibilities & Contributions as AI & Cloud-Native Solution Architect & Technical Lead

- Architected **multi-agent AI** workflows using **LangChain4j** and **Azure OpenAI**
- Designed **semantic search** pipelines using **RAG** and **vector databases**
- Led **PoV** development for intelligent automation and enterprise knowledge retrieval
- Ensured **AI solutions** met enterprise **compliance, security, and ethical standards**
- Led **migration** and **modernization** of microservices to **Azure Cloud**, implementing **event-driven architectures** using **Azure Services & Functions** for scalable payment and transaction services.
- Architected** and integrated **Camel AI** (Apache Camel) for intelligent message routing, event-driven orchestration, and **multi-agent** communication within transaction processing pipelines.
- Designed** and **automated secure** CI/CD pipelines using **Azure DevOps, Terraform, and Bicep**, incorporating **canary releases, security scans, and observability** strategies with Prometheus, and **Azure Data explorer**.
- Promoted **GitOps** principles and reusable deployment patterns leveraging Kubernetes (AKS) and service mesh (**Istio**) for scalable **agentic AI** infrastructures.

Leadership & Strategic Impact

- Partnered with Product Owners & Tech Leads to guide squads on arch. decisions.
- Translated tech solutions into business value across **compliance, risk, & operations**.
- Mentored** engineers on best practices for **agentic AI** workflows, microservices patterns, and secure system design, initiated team-wide **code review & style practices**, boosting code quality and productivity.

SOLUTION ARCHITECT | FINNISH GOVERNMENT DIGITAL AGENCY HELSINKI | SENIOR CONSULTANT CGI, FINLAND | 6/23 – 04/24

Key Responsibilities & Contributions as Cloud-Native Solution Architect & Team Lead

- Migrated GitLab CI/CD to **cloud-native AKS deployments** with **Azure DevOps & Helm** for infrastructure provisioning. **Engineered** container orchestration workflows and infrastructure provisioning using Docker and **IaC** (Terraform), enhancing deployment consistency and scalability.
- Integrated **Azure services** (Key Vault, Event Hub, Application Gateway, and Azure Monitor) into the deployment pipeline.
- Designed** and **implemented Elasticsearch-based search architecture** to handle high-load queries on Finnish population registry data, resolving major performance bottlenecks.
- Led architecture reviews aligning with **security, compliance, and FinOps**.

Programming Languages & Frameworks

Backend: Java (8–21, Camel DSL), Spring Boot 3.x, Quarkus
Frontend: NextJs, React, Typescript
Scripting & Automation: Python, Shell
Integration & Messaging: Apache Camel, Kafka, RabbitMQ

Testing & Quality Assurance

Unit & Integration Testing: JUnit5, Mockito, Testcontainers, Rest-assured, Postman, Cypress, Selenium, SonarQube, ESLint

Databases & Storage

Relational: PostgreSQL, MySQL, AzureSQL
NoSQL: MongoDB, Redis
Search & Analytics: Elasticsearch, Azure Data Explorer (ADX)
Data Lakes & Warehouse: Az Synapse

Monitoring & Observability

Logging & Tracing: ELK Stack Open Telemetry, Fluent bit
Metrics & Dashboards: Azure Monitor, ADX, Prometheus, Grafana
Incident Management: Azure Alerts, ServiceNow

Security & Compliance

Auth & Identity: OAuth2, Azure Entra ID (Azure AD), Managed Identity, Conditional Access, Role-Based Access Control (RBAC)
Secrets Management: Azure Key Vault, AWS Secrets Manager
Compliance: GDPR, Audit Logging

EDUCATION

PhD at TALTECH, Estonia (2014-2020)
Topic: Model-Based Testing of Real-Time Distributed Systems.

Master of Technology (2013-2014)
Exchange Student under **Erasmus Mundus Scholarship**. Software Engineering Tallinn University of Technology, Estonia.

Master of Technology (2012-2013)
Software Engineering National Institute of Technology, Rourkela, India.

- Mentored teams on **AKS onboarding**, best practices in **CI/CD automation**, and **containerization**.
- Improved deployment by **60%** via automated rollbacks & **canary strategies**.
- Documented migration cookbooks & architectural decisions for long-term maintainability.
- Mentored engineers and initiated team-wide **code review & style practices**, boosting code quality and productivity.

SR. SOFTWARE DEVELOPER | FINNISH GOVERNMENT DIGITAL AGENCY HELSINKI | SENIOR CONSULTANT CGI, ESTONIA | 07/21 – 5/23

Tech Stack: Java 17, Maven, Spring Boot (JPA, Security, AOP), ReactJS, Oracle, MongoDB, ActiveMQ, Apache Camel, Map Struct, Docker, Kubernetes, Gitlab CI/CD, Elasticsearch, JUnit5, Mockito, Testcontainers, Cypress, Rest-assured, OpenAPI, SonarQube

Developed Finnish Municipality applications with modern technologies:

- Backend using Java (**Java 17, Spring Boot 3.x**) & Frontend using **ReactJs**
- Built secure, scalable backends with **Spring Security (JWT, OAuth2)**, **JPA**, and **AOP**.
- Integrated **ActiveMQ** messaging via **Apache Camel** & implemented **Elasticsearch**-based search with **Kibana**.
- Managed data with **Oracle**, **MongoDB**, and **Flyway** for DB migrations.
- Delivered robust test coverage using **JUnit 5**, **Mockito**, **Test containers**, **Rest-assured**, and **Selenium**, **Cypress**.
- Containerized services with **Docker**, deployed on **Kubernetes**, and automated pipelines via **GitLab CI/CD**.
- Participated in **pair programming**, **code reviews**, and **architectural** technical discussions to drive quality and collaboration.

FULL STACK DEVELOPER | PAYMENTS AREA, SEB BANK TALLINN, ESTONIA | 08/18 – 06/21

Tech Stack: Java 8+, Maven, Microservices Arch, Spring MVC, Spring Boot (JPA, Security, AOP), Angular, ReactJS, Oracle, PostgreSQL, Docker, Red Hat Open Shift, JFrog, Git, Jenkins CI/CD, JUnit5, Mockito, Selenium, Robot Framework, Rest-assured, Swagger, Kubernetes

Developed Bank's first digital services applications with modern technologies:

- Refactored the bank's legacy monolithic systems to microservices architecture using **Java 8+**, **Spring Boot**, and **Docker**
- Developed Estonian services for **digital authentication** and **e-signatures**
- Implemented microservices, deployed using OpenShift to achieve **CI/CD** via **Jenkins & JFrog**
- Delivered robust test coverage using **JUnit 5**, **Mockito**, **Rest-assured**, and **Selenium**, **Cypress**, **Robot Framework**.
- Responsible for maintenance and handling live incidents in production

THE EARLY DAYS IN THE BUSTLING WORLD OF SOFTWARE DEVELOPMENT A young developer with a passion for coding & a keen interest in learning object-oriented methodologies and mastering wide range of tools and technologies to build robust, scalable, and maintainable Java applications.

SOFTWARE DEVELOPER | ELVIOR | TALLINN, ESTONIA | 05/16 – 07/18

Key Responsibilities & Contributions as Software Developer

- Developed a **Model-Based Testing tool (TTCN-3)** for automated software testing.
- Designed and implemented a **test case optimization algorithm** in **Java**, published in a scientific conference. Integrated the algorithm with the **DIVINE model checker** to enhance formal verification capabilities.

SOFTWARE DEVELOPER | IB KRATES | TALLINN, ESTONIA | 09/14 – 04/16

Key Responsibilities & Contributions as Software Developer

IT DISCIPLINES

Agile mindset, Scrum Master, Team Lead, Mentoring, Cross-functional Collaboration, Time Management, Communication, Stakeholder Engagement Solution Business-to-Technology Alignment

LANGUAGES

English, Hindi, Estonian (B1), Dutch (A1)

- Developed information systems ranging from **desktop databases** to **distributed server applications**. Followed **RUP (Rational Unified Process)** and used **UML** for system specification and documentation. Utilized proprietary tool **AFRA** to auto-generate user interfaces from data models, significantly reducing manual effort.

CERTIFICATIONS & TRAININGS

- Completed full **Microsoft AWS & Azure certification path** (Architect & Developer tracks including **AZ-305-Azure Solutions Architect Expert** & **AI-102: Azure AI Engineer Associate**) by **Pluralsight Skills & Skillsoft**
- TRAININGS
 - **IBM RAG and Agentic AI Professional** Certificate - Coursera
 - **Building AI Agents and Agentic Workflows** - Coursera
 - **AI Agents: Automation & Business with LangChain & LLM Apps** - Udemy
 - **AI Agents: Building Teams of LLM Agents that Work For You** - Udemy
- POCS
 - **LangChain4j & Agentic AI Bootcamp** – Self-paced hands-on training on agent orchestration, tool use, and memory.
 - **PoC: RAG with Azure OpenAI & pgvector** – Built semantic search assistant using embeddings and vector store.
 - **Multi-Agent Systems** – Designed collaborative agents using LangChain4j for enterprise task delegation and decision-making.
 - **LLM Evaluation & Prompt Engineering** – Experimented with prompt tuning, token streaming, and model selection strategies.
 - **Semantic Search Pipelines** – Integrated Azure Cognitive Search and PostgreSQL pgvector for enterprise knowledge retrieval.
 - **Tool-Augmented Agents** – Developed agents with external tool calling (e.g., search, calculator, document retriever) using LangChain4j.