

Dominik Cebula

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Cloud Software Principal Engineer

PROFESSIONAL PROFILE

A committed and experienced principal engineer specializing in cloud software development for complex domains, always looking for new opportunities to develop cloud-native products. Alongside my professional commitments, I am also a Udemy instructor and a book author.

COMPETENCIES

Concepts and Principles:

- ▶ Microservices Architecture ★★★★★
- ▶ Modular Monolithic Architecture ★★★★★
- ▶ Micro-Frontends ★☆☆☆☆
- ▶ Clean Code ★★★★★
- ▶ GoF Design Patterns ★★★★★
- ▶ SOLID ★★★★★
- ▶ Hexagonal Architecture ★★★★★
- ▶ Testing Pyramid, Testing Trophy ★★★★★
- ▶ London (Mockist) & Classical (Detroit, Chicago) Schools of Unit Testing ★★★★★
- ▶ IoC / DI ★★★★★
- ▶ Domain Driven Design (Basics) ★★★★★
- ▶ REST API Design (Richardson Maturity Model) ★★★★★
- ▶ Scrum / Agile ★★★★★
- ▶ CI / CD ★★★★★
- ▶ The SRE Four Golden Signals ★★★★★
- ▶ Infrastructure-as-Code (IaC) ★★★★★

Cloud:

- ▶ Google Cloud Platform (GCP) ★★★★★
- ▶ Amazon Web Services (AWS) ★★★★★
- ▶ Kubernetes / GKE / EKS ★★★★★
- ▶ Docker / Docker Compose ★★★★★

Frontend:

- ▶ React / Redux / ES6 ★★★★★
- ▶ HTML / CSS / JavaScript / jQuery ★★★★★
- ▶ Java Swing / JavaFX ★★★★★
- ▶ NetBeans Platform ★★★★★

C++:

- ▶ GCC / G++ ★★★★★
- ▶ CMake ★★★★★
- ▶ NMake ★★★★★
- ▶ CLion / Visual Studio ★★★★★

Linux:

- ▶ Experienced User & Bash Scripting ★★★★★

Programming Languages:

- ▶ Java ★★★★★
- ▶ GoLang ★★★★★
- ▶ Python ★★★★★
- ▶ JavaScript ★★★★★
- ▶ C++ ★★★★★
- ▶ Bash ★★★★★

Backend:

- ▶ Spring Boot, MVC, Core ★★★★★
- ▶ REST APIs, gRPC ★★★★★
- ▶ Wildfly / Tomcat ★★★★★
- ▶ Java EE / Jakarta EE ★★★★★

Data / Big Data:

- ▶ Cloud Spanner ★★★★★
- ▶ Oracle Database ★★★★★
- ▶ AWS RDS for PostgreSQL ★★★★★
- ▶ Apache Spark / Hadoop HDFS ★★★★★
- ▶ Jupyter / Zeppelin ★★★★★

Architecture:

- ▶ ADRs, Solution Design ★★★★★
- ▶ Decision Matrix, Trade-offs Analysis ★★★★★
- ▶ C4 Model ★★★★★
- ▶ PlantUML / AsciiDoc / Antora ★★★★★

Tools:

- ▶ Maven / TeamCity / Jenkins ★★★★★
- ▶ IntelliJ ★★★★★
- ▶ Git / GitHub / Bitbucket ★★★★★
- ▶ Rally / JIRA ★★★★★

Machine Learning / Operation Research:

- ▶ Supervised Machine Learning ★★★★★
- ▶ Scikit-Learn, Jupyter, DataSpell ★★★★★
- ▶ Linear / Integer Programming Model Analysis ★★★★★
- ▶ IBM ILOG CPLEX ★★★★★

KEY ACHIEVEMENTS

- ▶ Created Udemy courses purchased by 14,000 students.
- ▶ Authored the book "GoF Design Patterns Distilled" published on Amazon and Leanpub.
- ▶ Achieved AWS Certified Solutions Architect certification.
- ▶ Achieved VMware Spring Professional certification.
- ▶ Introduced Hexagonal Architecture Alignment in large product enabling a domain-centric, testable, infrastructure-independent approach to system development.
- ▶ Implemented monitoring and tracing capabilities for internal application runtime using Java Aspects and Interceptors.
- ▶ Led the "Production Readiness" initiative, covering monitoring, logging, alerting, latency measurement, and non-functional testing (performance, soak, stress, and chaos engineering). Also included automated security scans, code quality checks, open-source license compliance, CI/CD, and a blue-green deployment strategy.
- ▶ Migrated a large monolithic product (4 million lines of code) to a microservices architecture.
- ▶ Designed and implemented an internal microservices framework to facilitate the incremental migration of Java EE and Wildfly-based products from Monoliths to Microservices.
- ▶ Developed a native auto-scaler for the first microservices extracted from the monolith.
- ▶ Improved time-to-market by enabling independent deployments through runtime modules for a large-scale product (4 million lines of code).
- ▶ Defined a strategy for automated, hands-off certificate management in response to production incidents caused by expired certificates (execution in progress).
- ▶ Created "Models Lab", a platform for rapid prototyping and testing of models in C++, Java, and R.
- ▶ Implemented Airline Market Data Analysis and Visualizations Platform consisting of Frontend and Backend.
- ▶ Won 1st place at Sabre Hackday with "Flight Delay Predictor", a statistical model for predicting flight delays based on historical data.
- ▶ Won 1st place at Sabre D&A Ideation Blitz with the AI/ML project "After-COVID Market Size Estimator."
- ▶ Won 3rd place at Sabre Hackday with the AI/ML project "Automatic System for Issue Prioritization."

PROFESSIONAL EXPERIENCE

Since 01 Oct 2024: HSBC Service Delivery (Polska) Sp. z o.o. - Cracow

Current

▶ Principal Software Engineer – 01 October 2024 – Current

○ Role Summary:

- As a Principal Software Engineer, I work across various engineering teams and value streams to define and execute technology strategy, ensuring the successful implementation of projects throughout the organization. I contribute to driving Global Private Banking and Wealth (GPB&W) engineering activities in Poland on behalf of the GPB&W CTO and the extended leadership team.

○ Responsibilities:

- Leading the Java & Spring Community of Practice.
- Ensuring high code quality and adherence to best practices while fostering a culture of continuous improvement.
- Supporting the Engineering Strategy of GPB&W with a focus on Cloud, APIs, Microservices, CI/CD, and DevOps/SRE.
- Providing specialist technical expertise in Systems Engineering, Systems Design, Microservices, Java, and Spring.
- Ensuring service resilience, sustainability, and adherence to recovery time objectives for all delivered software solutions.

○ Technologies:

- Backend: Java 17, Maven, Spring Boot
- Frontend: ReactJS, JavaScript, Redux, Redux-Saga
- Database: AWS RDS PostgreSQL
- Cloud: AWS
- Containers: Docker, Kubernetes / EKS
- Architecture style: Microservices
- Communication: REST API, EDA (Event Driven Architecture)
- CI/CD: Jenkins, Nexus, EKS
- VCS: Git

Since 01 Oct 2012 - 30 Sep 2024: Sabre Holdings - Cracow

12 years

▶ Principal Software Architect – 01 September 2022 – 30 September 2024

○ Role Summary:

As a Principal Software Architect, I create Technical Requirements in alignment with Business Requirements. I create High-Level Designs for capabilities and execute work together with Team Leads and Teams. I operate within the Airline Retailing domain, where I identify systems that need to be integrated to deliver end-to-end business use cases. I

work on the Offer & Order Model, which allows Airlines to create and distribute relevant offers to customers regardless of the distribution channel. I help Teams integrate Point of Sale Systems (POS), Offer Generation Systems, Order Management System (OMS), Payment Systems, Booking, Ticketing, and Inventory Systems, focusing on the Order Management System (OMS).

- Key Projects & Achievements:
 - Retailing Ancillaries at the Airport – enables Airlines to sell ancillaries to passengers waiting for a departure at the gate
 - NDC Enablement for Seats Retailing – allows for selling pre-reserved seats through New Distribution Capability (NDC)
 - NDC Enablement for Ancillaries Retailing – allows for selling ancillaries through New Distribution Capability (NDC)
 - Clean Architecture Alignment – enables a domain-centric, testable, infrastructure-independent approach to system development
 - Production Readiness – Non-functional tests, Automated Security Scans, Code Quality Scans, Open-Source Licenses Usage Alignment, CI/CD, Blue-Green Deployment Strategy, Monitoring, Logging, Alerting, Tracing, Performance measurements
 - Compliance – PCI, PII / GDPR
- Responsibilities:
 - Solution Design Around SLAs and Costs
 - Business and Technical Requirements Analysis
 - Architecturally Significant Requirements (ASR) Documentation Creation
 - Technical Documentation Creation
 - Technical Backlog Definition
 - Work execution with Team Leads
 - RFP / RFI Analysis
- Technologies:
 - Backend: Java 17, Maven, Bazel, Spring Boot
 - Database: Cloud Spanner
 - Cloud: GCP
 - Containers: Docker, Kubernetes / GKE
 - Architecture style: Microservices, Clean Architecture
 - Communication: gRPC, Service Mesh, Envoy, REST API
 - Design & Docs: Plant UML, AsciiDoc, Antora
 - CI/CD: Jenkins, Nexus, GKE
 - VCS: Git, Bitbucket

► Principal Software Engineer - 01 September 2019 – 31 August 2022

○ Role Summary:

As a Principal Software Engineer, I am working with multiple Teams on completing goals in cloud-related projects. I am involved in the end-to-end product lifecycle, from both business and technical perspectives, taking into account ROI calculations, business case requirements gathering, product design, development, and work planning for Teams. In addition, I am educating teams on code quality and advising on technologies.

○ Key Projects & Achievements:

- After-COVID Marker Size Estimator - 1st place on D&A Ideation Blitz, Random Forest Classifier, and Regression for Market Size Estimation based on public events for After-COVID Recovery
- NPS Microservices Framework – Monolith Runtime Extensions allowing for incremental migration to Microservices
- NPS Monolith to Microservices Migration – Modularization, Decoupling, Refactoring, Containerization of the large product (4M lines of code)
- NPS Models Auto-Scaling Capability – Native Auto-Scaler for first Microservices extracted from Monolith
- NPS Micro-Frontends Design - Webpack 5 Module Federation-based Micro-Frontends approach
- NPS Models Workflows – Auto-Scaled End-To-End Business Workflows for Models Area
- AVPS Models Registry & Models Override – Decoupled Runtime Modules for Models Area, allowing independent deployment and experiments
- AVPS Insights – Airline Market Data Analysis and Visualizations

○ Responsibilities:

- Member of the NPS Architecture Council
- Leading work for Cracow-based Team
- Design, Development, Work Planning, Proof of Concepts Implementations
- Technical Advisor for Cloud and Container Related Technologies
- Architecture Design, Costs Calculations, Work Efficiency Improvements Calculations, ROI Calculations
- Cooperation with Dallas, Washington D.C., and Bengaluru on key initiatives
- Scrum Master – Building Self-Organizing Teams

○ Technologies:

- Containers: Docker, Kubernetes
- Cloud: AWS EC2 / VPC / ELB / Route 53 / S3 / EFS

- Cloud: GCP GKE / Compute Engine
 - Backend: Spring Boot, Wildfly, Java 11
 - Frontend: JavaScript ES6, ReactJS, Redux, Webpack, NPM, Mocha, SinonJS, Babel
- ▶ Team Lead Software Developer - 01 Apr 2017 – 31 August 2019
- Role Summary:

As a Team Lead Software Developer, I was responsible for helping the Team to achieve short-term and long-term goals on both technical and work organization levels. I worked closely with Architects and Product Owners to gather priorities and business/technical requirements for functionalities being built. In addition, I was educating the team on code quality and advising on technologies.
 - Key Projects:
 - AVPS Insights – Airline Market Data Analysis and Visualizations
 - Automatic System for Issue Prioritization – 3rd place on Sabre Hackday, Naive Bayes Classifier, and Prioritization System for Issues Reported by Customers
 - Responsibilities:
 - Team Lead for Cracow-based Team for AVPS Insights
 - Technical Advisor for Cloud Related Technologies
 - Cooperation with Dallas, Washington D.C., Toronto, and Bengaluru on key initiatives
 - Scrum Master – Building Self-Organizing Teams
 - Technologies:
 - Cloud: AWS EC2 / VPC / ELB / Route 53 / S3 / EFS
 - Backend: Spring Boot, Apache Hadoop, Apache Spark, Java
 - Frontend: JavaScript ES6, ReactJS, Redux, Webpack, NPM, Mocha, SinonJS, Babel
- ▶ Senior Software Developer - 01 Aug 2015 - 31 Mar 2017
- Role Summary:

As a Senior Software Developer, I was responsible for implementing Enhancements and Bugfixes for new and existing projects of the AVPS family. In addition, I was working closely with other Team Members and helping them create easy-to-understand and maintainable code aligned with quality standards.
 - Key Projects:
 - AVPS Models Lab – Platform for Models Spike Creation and Testing in C++, Java, R

- Enhanced Robust Operational Aircraft Routing – Integrating Integer Programming Model for Rotation Optimization
- User Defined Reporting – Automatic Reporting with Excel Integration for Airline Data
- Flight Delay Predictor – 1st place on Sabre Hackday, Statistical Model for predicting Flight Delays based on historical data
- Responsibilities:
 - Lead for Flight Delay Predictor Team
 - Lead for AVPS Models Lab
 - End-to-end Implementation of AVPS Models Lab
 - Implementation and Integration of Enhancements and Bugfixes for AVPS Products
- Technologies:
 - Backend: Spring Boot, Apache Hadoop, Apache Spark, SparkJava, Java SE/Java EE, EJB, RMI, Wildfly, Oracle 12g Database, IBM ILOG CPLEX, SVN, JUnit, EasyMock, Mockito
 - Frontend: HTML, CSS, jQuery, Java Swing, Java FX, NetBeans Platform
- ▶ Contributor Software Developer - 01 Jul 2013 - 31 Jul 2015
 - Role Summary:

As Contributor Software Developer, I provided necessary help while implementing new features and bugfixes for Core Runtime parts for AVPS projects. I was also responsible for Models implementation for AVPS Fleet Manager.
 - Key Projects:
 - Rotation Quality Metrics Improvements – Heuristic Algorithm for Rotation Optimization
 - Multiple Solutions Reporting Implementation – Ability to report on data for multiple Integer Solutions
 - Input Schedule Violations Implementation – Ability to Measure Input Schedule Rules Violations Level
 - AVPS System Runtime – Tracing, Monitoring, Debugging Capabilities
 - Responsibilities:
 - Implementation of Rotation Quality Metrics Improvements
 - Implementation of Multiple Solutions Reporting
 - Implementation of Input Schedule Violations
 - Enhancements & Bugfixes for AVPS Product Family
 - Technologies:

- Backend: Java SE/Java EE, EJB, RMI, JBoss, Oracle 12g Database, IBM ILOG CPLEX, SVN, JUnit, EasyMock, Kibana, Elasticsearch
 - Frontend: Java Swing, Java FX, NetBeans Platform
- ▶ Associate Software Developer - 01 Oct 2012 - 30 Jun 2013
- Role Summary:

As Associate Software Developer, I was part of the team responsible for implementing AVPS Fleet Manager related bugfixes and new enhancements.
 - Key Projects:
 - AVPS Fleet Manager Spill and Recapture Model – Enhancements Implementation for overbooking model
 - AVPS Fleet Manager – Fleet Assignment Model – Enhancements for Integer Programming Model for IBM ILOG CPLEX that solves Fleet Assignment Optimization Problem
 - AVPS Fleet Manager – Economic Data Generator – Enhancements for Mathematical Model that creates Revenues, Costs Calculations for Airlines Schedules based on Aircraft Configurations and Forecasted Demand Data
 - Responsibilities:
 - Enhancements / Bugfixes for existing functionalities
 - Linear/Integer Programming – Mathematical Model Analysis and Implementation
 - Technologies:
 - Backend: Java SE/Java EE, EJB, RMI, JBoss, Oracle 11g Database, IBM ILOG CPLEX, SVN, JUnit, EasyMock
 - Frontend: Java Swing, Java FX, NetBeans Platform

01 Oct 2008 - 30 Sep 2012: Syriusz sp. z o.o. - Rzeszow

4 years

- ▶ System Software Developer - 01 Oct 2008 - 30 Sep 2012
- Role Summary:

As a System Software Developer, I was responsible for the End-To-End Development of Syriusz Company products, including implementing integration with external systems.
 - Key Projects:
 - Hermes
 - Hermes EDI (Electronic Data Interchange)
 - eHermes
 - Harmonia

- Responsibilities:
 - Warehouses System Development
 - B2B System Development
 - Invoice Exchange Systems Integration
 - Production Control Systems Development
- Technologies:
 - Backend: C++, Delphi, PHP, FirebirdSQL
 - Frontend: HTML, CSS, jQuery, Delphi VCL

Since 18 May 2019 – Udemy Instructor

- ▶ Udemy Instructor - 18 May 2019 - Current
 - Role Summary:

I created a series of courses on Spring Professional Certification with over 14 000 students.
 - Key Projects:
 - Spring Professional Certification Exam Tutorial
 - Spring Professional Certification Exam Practice Tests
 - Spring Native and GraalVM - Build Blazing Fast Microservices
 - Responsibilities:
 - Creating Education Materials
 - Video Editing
 - Audio Editing
 - Marketing
 - Technologies:
 - Java, Spring Boot, Spring Framework
 - Audacity
 - Shotcut

CERTIFICATION

- ▶ VMware Spring Professional
- ▶ AWS Certified Solutions Architect – Associate
- ▶ Scrum Alliance Certified ScrumMaster

EDUCATION

01 Apr 2010 - 31 Jul 2011

1.5 year

University of Information Technology and Management in Rzeszow

- ▶ Degree: Master of Science
- ▶ Specialization: Software Development Technologies

01 Oct 2006 - 31 Mar 2010

3.5 year

University of Information Technology and Management in Rzeszow

- ▶ Degree: Bachelor of Engineering
- ▶ Specialization: Software Engineering

BOOKS

- ▶ Title: GoF Design Patterns Distilled
- ▶ Author: Dominik Cebula
- ▶ Description:
 - Provides straight to a point, distilled explanation of GoF Design Patterns with meaningful examples. Covers all 23 design patterns, divided into three groups: Creational, Structural, and Behavioral. Each design pattern is presented with a description, use cases, a diagram, and a meaningful example code written in Java.
- ▶ Leanpub: <https://leanpub.com/gof-design-patterns>
- ▶ Amazon: <https://www.amazon.com/Design-Patterns-Distilled-Dominik-Cebula-ebook/dp/B0C91X1GT8>

FOREIGN LANGUAGES

- ▶ Very good knowledge of spoken and written English that allows to:
 - communicate freely verbally, using Mail, IM
 - read and write technical documentation/books