

## Curriculum Vitae

Name	Jan Ypma
Year of birth	1981
Residence	Copenhagen
Nationality	Dutch



## About me

I am a skilled software engineer and architect with a solid background in system development, and comprehensive knowledge of software design and system architecture. Through working in various roles in technologically complex enterprise projects, for firms ranging from start-up to multi-national, I've had success in leading distributed teams of different backgrounds, and effectively bridging the gaps between business and technical teams. My communication and facilitation skills have also matured via the frequent exercise of mediating a common understanding for technical decisions among diverse project stakeholders. I enjoy sharing my ideas and professional interests in a variety of ways, ranging from one-to-one tutoring to speaking at international conferences. I am a regular contributor to a range of open source software projects, most notably Akka and its http stack.

Although my core skills and experiences are related to JVM-based distributed enterprise systems, I'm constantly exploring new realms of technological developments, and their business applications. I have a strong personal interest in electrical engineering and embedded systems. I am fast and adept at extending or adapting existing products by creating new or supplementary tools. I have strong analytic skills and a creative mind, always seeking alternative ways of fulfilling a project goal if one way doesn't work out. Being a technology evangelist, I am often consulted for technological advice, by both colleagues and friends.

## Recent interests

### Reactive architectures

The reactive manifesto, and the maturing of the Akka Streams library, have profoundly affected the way I'm designing new systems. Starting from considering threads a precious resource, I slowly discovered that streaming approaches also bring advantages like guaranteed memory boundedness and increased testability. Suddenly able to optimize for both *few huge-sized requests* and *loads of tiny requests* simultaneously has been an eye-opener, to which I try to convert my colleagues on a daily basis. It is also the foundation for the event-sourcing modernization projects I'm driving.

### Wireless Smart Home

The Arduino rage happened to hit me right after I moved into the first house of my own. It amazed me how integrated systems like its water heating, floor heating, electricity meter, alarm, doorbell and lights were so related in function, yet completely unaware of each other. So I decided to order a bunch of ATmega328 microcontrollers and RFM12B wireless chips, setting off to make our home a bit more "Smart". Along the way, I wrote a more testable, type-safe C++17 alternative to the Arduino ecosystem.

A few years in, I've integrated the alarm, motion sensors, doorbell, temperature/humidity and lights wirelessly through a central Java web application. In addition, I've replaced our floor heating controller with an alternative of my own design, that integrates into the system.

## Employment

2020 – present	Ypma Consulting (Denmark), <i>(Freelance) Solution Architect, Developer, Coach</i>
2013 – present	Lund & Bendsen (Danmark), <i>(Freelance) Course instructor in Spring and Groovy</i>
2011 – 2020	Tradeshift (Denmark), <i>Software Architect / Developer</i>
2010	Red Hat (Denmark), <i>Senior Consultant Middleware</i>
2005 – 2010	Capgemini (Netherlands), <i>Senior Consultant</i>
2001 – 2004	3i Communication (Netherlands), <i>Java Developer</i>
1998 – 1999	Royal Haskoning (Netherlands), <i>Developer</i>

## Selected project experience

### Lund & Bendsen: Enterprise Event Bus architecture

Period: 2020 Sector: Services

Customer: Lund & Bendsen Roles: Solution Architect, Lead Developer

Keywords: Scala, Akka, Kafka, Avro, Azure, Kubernetes, Event Sourcing, UBL, XML, Coupa, Modeling

The customer, a large international facility management company, is looking to roll out a centralized event bus architecture, through the moving of several transactional business processes to the cloud.

I was tasked with creating blueprint processes needed for data modeling, event definitions, code lists, microservice granularity, and lifecycle management for each. The event bus is designed around Kafka, with UBL (XML) as a central data format. I created reference implementations for several business domains, integrating between the cloud and ERP systems.

### Tradeshift: Scalable document pipeline

Period: 2017 – present Sector: Public, Finance

Employer: Tradeshift (DK) Roles: Solution Architect, Lead Developer

Keywords: Java, Scala, Akka, Clustering, Cassandra, Elasticsearch, Docker, Puppet, Terraform

Tradeshift's recent growth left its document pipeline with a performance challenge, as well as a maintenance challenge. Increasing processing times meant that it was time to revisit the request-per-thread architecture and monolithic deployment. Influenced by reactive programming, I designed an alternative architecture with a modular and cluster-first design, allowing any user to “plug in” new document behavior for themselves and for others, retaining bounded memory usage without document size restrictions.

The new document pipeline is currently powering production use cases.

### Tradeshift: Monolith modernization strategies

Period: 2016 – present Sector: Public, Finance

Employer: Tradeshift (DK) Roles: Enterprise Architect, Lead Developer

Keywords: Java, Spring, JDBC, Postgres, Elasticsearch, Event Sourcing, Team dynamics, Micro-services

The oldest component in Tradeshift comprises 300,000 lines of Java code. It had become more and more challenging to have over 200 committers change things at will, so of course micro-services had to come to the rescue.

I helped design an approach that allows the monolith's data to be exposed as event journals, to be consumed by incrementally-developed micro services. Also known as the *Strangler Pattern*, this allows for a relatively soft transition to smaller services eventually taking over parts of the monolith.

The approach successfully has been implemented for several domains, which are moving to new code bases, managed by separated teams.

### **Tradeshift: Continuous deployment pipeline**

Period: 2014-2015 Sector: Public, Finance  
Employer: Tradeshift (DK) Roles: Solution Architect, Lead Developer  
Keywords: Docker, Puppet, Jenkins, Helios, Kubernetes

We faced an increasing complexity in diversity of components, with a knowledge-limited Operations team. In trying to streamline this, we reached for docker as a potential standardization candidate, using Helios at the time for clustering (since replaced by Kubernetes). We retained Puppet as a glue technology, because of the existing team's experience level, but were able to remove thousands of component-specific lines of puppet code.

Although it faced a slow adoption process, initial proofs of concept were shown successful, and helped convince others. Today, almost everything at the company is deployed as a docker container.

### **Red Hat: ESB Deployment Advice**

Period: Jul 2010 – Dec 2010 Sector: Public, Services  
Employer: Red Hat (DK) Roles: Business Developer, Solution Architect  
Keywords: Java, JBoss, ESB, EAI, SOA

The client, a municipality in the UK, is seeking advice in developing a strategy for service orientation. Through intensive collaboration with various business and technological stakeholders, I set up guidelines for business SOA adoption, technical implementation guidelines, along with developing example ESB components. This holistic architecture will be used to implement service orientation in a controllable way.

### **Capgemini: Model-driven architecture**

Period: Jan 2008 – Jun 2010 Sector: Finance, Mortgages  
Employer: Capgemini (NL) Roles: Software Architect, Process Coach  
Keywords: Java, EGL, Groovy, Eclipse, Websphere, JBoss, Spring, Hibernate, DB2, UML, MDA, Web services, Off-shore

The client wanted to replace its aging mid-office IT system with new software, to cut down the increasing maintenance costs. To this end, a reference UML model was applied, and customized with the client's specific wishes, according to MDA methodology. During the project, the code generator was changed from EGL to Java, while retaining the complete design model successfully. The project team size varied between 20 and 40 people, both on-shore and off-shore.

In my role as Software Architect, I provided technical leadership in terms of the system architecture, code generator, UML model, and modeling language. Additionally, I shaped the project's MDA blueprint, and played the process coach role to ensure smooth communication between different disciplines within the project team.

Together with my team, I succeeded in turning around our client from being conservative and skeptical toward object orientation and MDA, to appreciating high-tech development and a more predictable development and change management process enabled by a stringent methodology like MDA.

### 3i Communication: Mobile Browser Detection

Period: Jun 2003 – Jul 2004      Sector: Telecom, Mobile Internet

Employer: 3i Communication (NL)      Roles: Developer

Keywords: Linux, Java, JBoss, Servlets, JDBC, MySQL, WML, iMode, XHTML-MP

In these years, mobile internet was on the rise, with a great variety of browsers, phones, screens and formats as presentational means of mobile content. Content providers were striving to find a cost-efficient "middle road" among these formats. In an Extreme Programming team, I designed and implemented a mobile proxy service. This service takes an XHTML source and dynamically reformats it for a specific mobile client. The challenges to combine the great variability of input and output parameters were analyzed and tackled, while maintaining an intelligent caching system.

The system was implemented at a large mobile operator in the Netherlands.

### Publications, presentations and facilitation

2020 – Instructor for course *"Functional Fun"* at Tradeshift

2019 – Presenter at Embedded Scandinavia on *"Embedded development with modern, type-safe C++"*

2019 – Presenter at Flatmap Oslo on *"Building a reactive multi-user editor in ScalaJS"*

2018 – Presenter at JDK.io Copenhagen on *"Reactive user interfaces"*

2018 – Presenter at ScalaDays Berlin on *"Reactive user interfaces"*

2018 – Presenter at Lund & Bendsen on *"Reactive user interfaces"*

2017 – Presenter at C++ Meetup Copenhagen on *"Embedded development with modern, type-safe C++"*

2017 – Presenter at JDK.io Copenhagen on *"Reactive marshalling of XML, JSON and CSV"*

2017 – Presenter at ProgsCon London on *"Disruptive Development using Reactive Event-Sourced systems"*

2016 – Facilitator at Tradeshift workshop on *Akka*

2016 – Presenter at JAX London on *"Scalable Development using Reactive Event Sourcing"*

2016 – Presenter at GOTO Copenhagen on *"Disruptive Development using Reactive Event Sourcing"*

2016 – Presenter at JDK.io Copenhagen on *"Scalable event-sourcing at Tradeshift"*

2016 – Facilitator at JDK.io Copenhagen workshop on *"Reactive Programming with Akka"*

2016 – Presenter at Lund & Bendsen on *"Akka and concurrency models"*

2014 – Instructor for course *"Groovy 2.0 – Foundation"*

2014 – Presenter at Lund & Bendsen on *"REST API Design at Tradeshift"*

2013 – Instructor for course *"Introduction to Spring Basic / Spring Advanced"*

2013 – Presenter at Nordic APIs on *"RESTful API Design"*

2013 – Presenter at Lund & Bendsen on *"Extreme Home Automation"*

2009 – Article on Groovy in Dutch Java Magazine

2008 – Speaker on Spring and MDA at the SpringOne conference

2008 – Speaker on MDA at the Capgemini JavaNight customer event

2007 – Joint submitter of OMG proposal on "UML profile and metamodel for Services" (renamed SOAML)

2005 – Speaker on IEEE ICME (Int.Conf. for Multimedia & Expo), related to Master's Thesis

## Education and certification

2019 – SCRUM training

2014 – SCRUM training

2012 – Dansk Uddannelse 3

2010 – Red Hat Advanced JBoss Development

2009 – Open Group certified IT Specialist

2008 – OMG Certified UML Professional Fundamental

2008 – Facilitator for course "Service Oriented Architecture for Software Architects" at Capgemini International University

2008 – "Succeeding as a Solution Architect" at Capgemini International University

2007 – Sun Certified Java Programmer for the Java 5.0 Platform

1999-2005 – Information Technology, dept. Electrical Engineering, Eindhoven University of Technology

1992-1998 – VWO Gymnasium, Stedelijk Gymnasium Nijmegen

## Language skills

Dutch – Native language

English – Fluent in reading, speaking and writing

Danish – Fluent in reading, speaking and writing

German – Fluent in reading and writing, proficient in speaking

## Personal interests

- Piano, Guitar, Violin
- Electronics & Embedded Systems
- DJ'ing
- Photography
- Capoeira, Kung Fu, Running