

# Sylvain Leroy

SOFTWARE MODERNIZATION ARCHITECT

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*"Innovation is the right balance between risk and conservatism"*



## Key Points

- **Architect and consultant** specialized in information system migration issues and digital transformation.
- **14 years** involved in software migration projects, tools and methods.
- Founder of a company specialized in legacy software modernisation (Tocea) and Software quality
- Carried out numerous assessments for Ministries, banks, insurance companies, software publishers... some with famous groups as BearingPoint.
- Has been the CTO of a Software Editor that published solutions to modernize IBMz / IBMi
- Advised and participated in the bank transformation project for **Azqore** ( Integration with a new Cobol middleware)
- Recognized in Switzerland for my ability to help IT teams to **organize and perform modernization of their legacy software**.
- Still, an experienced developer and recognized Software Craftsman coach.
- Dedicated about the problems of handling legacy software since 2007

## Education

### Coursera

GOOGLE CLOUD SOLUTION ARCHITECT COURSE

Online  
Feb 2021 - On going

### Metrixware

INTRODUCTION TO IBMi/RPG LANGUAGE

Online  
Jan 2021

### NINJA SQUAD

ANGULAR 2 TRAINING

Geneve  
Jan 2017

### Metrixware

INTRODUCTION TO COBOL AND 3270

Nanterre  
2015

### INRIA/IRISA

STATIC ANALYSIS AND REFACTORING TOOLS TO IMPROVE THE PERFORMANCE, QUALITY AND SECURITY OF WEB APPLICATIONS,  
RESEARCH PROJECT

Rennes  
Jun 2007-2010

### University of Rennes 1

PERFORMANCE AND MICRO ARCHITECTURE, MASTER'S PROGRAM

Rennes  
Sep 2004-Jun 2007

### University of Rennes 1

BACHELOR OF COMPUTER SCIENCES

Rennes  
Sep 2002-Jun 2004

## SALT SA

SOLUTION ARCHITECT

Renens, Switzerland

March 2020 - March 2021

### CONTEXT

- IT Team 30 people, 5 architects, 25 devs / analysts
- Flat hierarchy environment
- Near-shoring in France ( 15 people)
- 4 Backends, 2 UI had to be migrated from Spring 2/Java 5 to Spring 5, Java 11 using Hexagonal Architecture
- Central payment system : 5 software, one 3rd party provider (Datatrans)
- 3 allocated people + Project manager

### ACHIEVEMENTS

- Prepare a technological roadmap and execute the modernization of the Payment system
- One year project, to perform much everything on our own; ( automated tests, non-regression, software modernization plus 1 UI rebuilt from scratch)
- Reverse engineering of the legacy system to allow later improvements
- Coached and trained junior developers.

### TECHNOLOGIES

- *Java Backend migration* : Java 6/Open JPA -> Java 11/Spring Boot/Data
- *Frontend/Backend migration* : Groovy/Play migration : Play Framework -> Spring Boot/MVC/Thymeleaf
- *Frontend migration* : GWT -> SPA/Typescript/Webpack/JQuery
- *Automated testing* : Junit 5, Cucumber, Selenium

## Serial SA/ Mobilière

SOFTWARE MODERNIZATION ARCHITECT

Nyon, Switzerland

September 2019 - March 2020

### CONTEXT

- Fixed-term employment contract
- Project Migration of 3 Legacy JBOSS/JSF Applications to Jboss 7.2
- Project LCM on existing systems
- Large organization in SAFE: 200 people
- Totally new team dedicated to this project: 7 people
- Time-constrained modernization
- Reverse-engineering and technology architecture impact analysis

### ACHIEVEMENTS

- Migration, modernization, and QA performed on time and budget
- Excellent feedback from the stakeholders
- Frequent architecture discussions with the local architecture team

### TECHNOLOGIES

- *Java Backend migration*: JBOSS 6.4->7.2, Java 6 to Java 11 Migration, Spring upgrade, Hibernate Upgrade and JBOSS Drools upgrade
- *Frontend migration*: Replacement of Primefaces to the latest version
- *Java Backend migration*: Java 8 to Java 11 Migration, Spring upgrade, Hibernate Upgrade and JBOSS Drools upgrade
- *Automated testing*: Junit 4, Cucumber
- *Methodology*: SAFE, SCRUM

## FAVEEO SA

CHIEF TECHNOLOGICAL OFFICER

Lausanne, Switzerland

August 2018 - August 2019

### CONTEXT

- Small Organization Environment
- Personal challenge to bring innovation
- Principal Architect, Lead Dev
- OKR/KPI oriented organization with strong budget and business incentives
- Multi-cultural environment

### ACHIEVEMENTS

- <https://essentials.news>
- <https://sylvainleroy.com/upload/videoscript-7fc1ccef88.mp4>
- Architecture Design and development of an innovative **AI prediction system** to detect future viral newspaper articles
- Architecture Design and development of an innovative system to generate Video using newspaper articles and AI
- Architecture Design an Automated AI generated mailing using Mailchimp, Elasticsearch and Java 11
- Achieved the technological and innovation goals for the company.

### TECHNOLOGIES

- Event Architecture, Pipeline, Messaging using RabbitMQ
- Java, Spring Boot, DeepLearning4j, Smile, Docker
- Vue.js, Spring Boot, RabbitMQ; Docker, MongoDB, Elasticsearch, OpenNLP
- Pure Cloud Player : AWS Environment
- Mail generation system using Node.JS, Java 8, Spring Boot and Mailchimp

## AZQORE SA / Credit Agricole

SOFTWARE QUALITY MANAGER, SOFTWARE MODERNIZATION ARCHITECT

Lausanne, Switzerland

December 2017 - August 2018

### CONTEXT

- Hired as Software quality and architecture auditor to control every delivery (Cobol, Java, Mobile...)
- Worked under the Principal Architect and inside the Enterprise Architecture team: 5 people
- Unofficially requested as Solution / Modernization Architect on several projects
- Two different cultures : IBMz IT and Digital IT
- Inshore, nearshore(France), offshore(Singapour) developments
- Strict ISO process for Document and communications

### ACHIEVEMENTS

- Architect role on the integration project of a Cobol middleware with Digital ecosystem.
- Intervened as a Solution Architect on critical production issues
- Mission with the Application Management to define and broadcast Application monitoring best practices
- Creation of a TechLead community inside the Bank
- Participated on some GDPR questions especially about system reverse engineering to secure customer data

### TECHNOLOGIES

- IBMz, Microfocus, IBM Websphere, IBM MQ
- Enterprise Architecture ARIS, Quality tools and Software Factory
- WSO2, ManageEngine AppManager, Dynatrace
- Java (JSF, Spring), Angular...

## SERIAL SA

SOLUTION ARCHITECT, TECH LEAD

Geneva, Switzerland

January 2017 - December 2017

### CONTEXT

- 3 Projects, two offsite, one onsite
- Generally in Scrum/Agile teams
- Architect role directly with the GSK/Novartis Upper Architecture management
- Solution Architect / Delivery control in a complex delivery environment for HSBC
- As Product Owners of the Bank Middleware system, really high stability and performance expected from the Architecture team
- Offshore with India and China : architecture, coaching, delivery, review, first level of technical support

### ACHIEVEMENTS

- *1st Trimester 2017 - GHI*: Software Quality Assessment and Performance testing
- *2nd Trimester 2017 - GSK Novartis*: Modernization of the Drug Packaging system
- *TechTalk*: Speaker: "Why developers should care about quality ?"
- *HSBC Private Banking*: member of the Architecture/Middleware team: performed several deliveries and go live in a multicultural / distributed environment

### TECHNOLOGIES

- *GHI*: Spring and Angular technologies, Okta authentication, JMeter and Gatling
- *GSK*: W4 Business engine, Docker, Jenkins, Oracle, Java, Javascript, JSP, Tomcat, Apache, Gradle, JIRA, Bamboo
- *HSBC*: Avaloq, Ansible, Jenkins, Spring, REST, SOAP, MQ, WebSphere

## METRIXWARE/TOCEA

STAKEHOLDER AND CTO

Rennes, Nanterre

Jun. 2014 - Dec. 2016

### CONTEXT

- Mergers between two companies ( 20 + 15 staff)
- Three sites : Paris, Rennes, Montreal
- Two very different cultures : 25 years, 50+ years
- Technology director for several product lines : Mainframe product, Software Factory product, DevOps product and Legacy Software migration products
- Principal Consultant for Key Accounts
- 50+ Active customer references France and International: insurances, banks, administrations, industries

### ACHIEVEMENTS

- Creation of a profitable activity around Software Modernization consulting
- Built the renown of the company over Software Factory and Devops Expertise
- Increased the company renown for its Technology/Architecture Roadmap and Software Assessment
- Launched successfully an KPI/DevOps Dashboard solution to track Devops initiative ROI
- Acquired a knowledge of the IBMz and IBMi challenges and integration issues with the Digital ecosystem
- *Software Modernization Project* Modernization program of the Swift Transfer Product for Fircosoft, Accuity
- *Software Modernization Project* Modernization program and transformation of the C/C++ Indexation Engine for SoLocal/Pages Jaunes
- *Software Modernization Project* Modernization program of 7 applications for INSEE
- *Software Modernization Project* Modernization program of core Logistic Product for SIGMA informatique
- *Software Modernization Project* Modernization program of the Orange's Webmail
- *Software Modernization Assessment* Architecture and Technology Roadmap for DGAC ministry
- *Software Modernization Assessment* State Council
- *Software Quality Assessment* Economy and Budget Ministry
- *Software Modernization Assessment* Canadian Promutuel
- *Software Quality Assessment and Postmortem* Delegated Software Quality Expert for the French Ministry of Environment
- *Digital Transformation Roadmap* for AXA software built over IBMz AXA
- *Software Modernization Assessment* C/C++ SEPA Payment system for Cedricom
- *IT Organization and Software Assessment* Campus France

### TECHNOLOGIES

- Proprietary Modernization framework and tools
- Eclipse Modeling and Framework
- Java ecosystem

## TOCEA

COFOUNDER AND CTO TOCEA/ECHOES LABS

Rennes, Quebec  
Mar. 2011 - Jun. 2014

### CONTEXT

- *Tocea is an innovating company that provides refactoring source-to-source solutions to help the software editor to refurbish their legacy software in record time and budget*
- Won the National Emerging Industry Innovation price in 2011 and 2012
- Built a team from 0 to 20, created a local branch in Montreal
- Technology director for two product lines : Software Quality Product and Software modernization product
- Principal Consultant for Key Accounts
- 50+ Active customer references France and International: insurances, banks, administrations, industries

### ACHIEVEMENTS

- *Architect*, main developer for a solution of Code Quality analysis, competitor of SonarQube
- *Contributor to SonarQube ecosystem* : development of a SaaS solution for SonarQube to provide worldwide Quality benchmarks
- *DevOps Coach* for SoftAtHome company, 60 Developers, 20 QA  
*Modernization of S@H Software Factory and build  
Test Automation coach, and Requirements analysis*

### TECHNOLOGIES

- Proprietary Modernization framework and tools
- Eclipse Modeling and Framework
- Java ecosystem

## INRIA/IRISA

RESEARCH ENGINEER FOR SERENITEC (SECURITY, REFACTORING, INTERNET, TECHNOLOGIES) RESEARCH PROJECT

Rennes  
Sep. 2007 - Sep. 2010

- **Main developer** of a new technology for the detection of **quality**, reliability and **security** problems in Web Applications
- Technical Lead of a research team (2 Phd, 2 Engineers)
- Code Qualimetry tool development : C/C++, Java

# Skills

## PROGRAMMING SKILLS

<b>Programming Languages</b>	Java 8,11+, JavaScript, TypeScript, Groovy
<b>Web/UI</b>	Vue.JS (vuex, vue-router), , Angular 8+, React-Native, Thymeleaf,JSF, Wicket
<b>Frameworks</b>	Spring Boot, Spring 5, CXF, MyBatis, Hibernate, Node.JS, Express, Loopback 3-4
<b>Machine Learning</b>	DeepLearning4j, Smile, Weka, KNime
<b>Test Tools</b>	Selenium, Puppeteer, SoapUI, Performance tooling, Cucumber, JBehave, JUnit 5/4, Mockito, Postman

## ARCHITECTURE SKILLS

<b>Software Architecture</b>	Cleancode, CQRS,DDD, Hexa/Clean Architectures, Microservices
<b>Cloud</b>	Terraform, Google Cloud (GCE, GKE, Pub/Sub, GCB, API), Amazon(S3, EC2, ECK, ECS, ELB, ECR, IAM)
<b>SAAS Services</b>	DataTrans, Google API, Mailchimp, Mailjet, Auth0, Stripe
<b>Legacy Software migration</b>	Cloud Software migration (Monoliths), Test Automation, 12 Factors, Source-to-source expert
<b>Mainframe experience</b>	<b>Cobol</b> (Code review), Java - Mainframe Integration (3270, Messaging)
<b>Databases</b>	MySQL/MariaDB, MongoDB, Elasticsearch, Neo4J, Sqlite, Oracle
<b>Platform services</b>	Tomcat, Varnish,RabbitMQ, ActiveMQ, JBOSS Keycloak, Apache2, JBOSS, HAProxy

## SOFT SKILLS

<b>Team management</b>	20+ IT staff management, Product Owner, Roadmap, Agile/Kanban, SAFE, Scrum, Waterfall
<b>Software Quality Assurance</b>	ISO 9126, ISO 25000, Balanced scorecard, CMMI, KPI, COCOMO2
<b>Quality Tools</b>	SonarQube, Squal, Kiuwan, Codacy, Klocwork, Coverity + opensource
<b>Innovation</b>	Research promotion, Innovating ideas, Research project initiator
<b>Languages</b>	French (Natural), English (C1), German (A2), Russian (A1), Italian(Beginner)

# Extracurricular Activity

## Freelance

France, Germany, Switzerland

### CONSULTANCY

2020

- Performance Audit for a Critical System of a SaaS company
- *Software Modernization Project* Modernization program of Logistic Product for Nexter Military Equipment
- Design and development of an automated Adobe FLEX to Angular 8/9 conversion tool
- Design and development of an automated RPG4 to RPG 8 conversion tool
- Java 5 -> Java 11 Software Modernization for a Land Defense Leader in France and Europe

## Freelance

Switzerland

### DESIGN AND BUILD OF A MOBILE APPLICATION FOR A STARTUP PROJECT

2019

- Using React Native, backend Node.JS and Typescript

## Freelance for Thalès AVS

France

### SOFTWARE FACTORY AND DEVOPS AUDIT

2019

- Software SDLC and Factory audit for the Thalès AVS Group

## Opensource Developer

Switzerland

### SONARTSLINT, SONARESLINT PLUGIN

PRESENT

- Maintainer of the opensource SonarQube plugin SonarESLint.
- Contributor to some open-source projects.

### HOBBIES

- Being a great father of 3 and a source of inspiration
- Hiking, Cycling, Cooking
- Learning Italian, Russian

# Honors & Awards

## INTERNATIONAL

2013	<b>Finalist</b> , Innovation award from the French Ministry of the Industry (Créadev)	Paris, France
2012	<b>Finalist</b> , Innovation award from the French Ministry of the Industry (Emergence)	Paris, France
2011	<b>Laureate</b> , Phar Fund laureate	Rennes

# Presentation

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## Byoskill

KEY SPEAKER FOR THE SCALEUP 360 LEGACY IT EUROPE CONFERENCE

- Big bang or iterative evolution : my hands-on experience.

Switzerland

2020

## Byoskill

CLEANCODE TRAINER

- Coaching and training of new Cleancode trainers

France

2019

## OCTO

PRESENTER FOR OCTO

- Internal presentation : Why should we love our software ?

Lausanne

July. 2017

## SERIAL

PRESENTER FOR SERIAL

- Internal presentation : Why code quality does really matter ? How to boost your dev skills.

Geneva

Apr. 2017

## Metrixware : cross-company training

CLEANCODE TRAINER

- Cleancode course
- Design pattern course
- Automated testing course

France

2014-2016

## Tocea : cross-company training

JAVA/SPRING TRAINER

- Java best practices
- SOA Best practices
- Java software optimizations

France

2012

## AFDEL

PRESENTER FOR AFDEL/TECH IN FRANCE

- Diminuer sa dette technique : stratégie de migration ... - TECH IN France

Paris

Jul. 2012

## INRIA Workshop

PRESENTER FOR INRIA WORKSHOP

- Source-to-source technics for Java software optimizations

Rennes

Sep. 2007

# Writing

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## Blog Writer

DIGITAL TRANSFORMATION REFACTORING

- Blog on various subjects : Code quality, refactoring, Enterprise Architecture, Digital Transformation
- <https://sylvainleroy.com>

Switzerland

Jan 2017 -Now

## Main Writer

SOFTWARE LEGACY: HOW TO SAVE THEM ?

- WhitePaper on Software legacy and how to handle the technical debt

France

Sep. 2016 - Dec. 2016

## Main Writer

SOFTWARE REQUIREMENTS : A COMPLETE GUIDE AND MARKET STUDY

- Exhaustive WhitePaper on Software requirement domain and requirement software market

France

Sep. 2015 - Nov. 2015