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## Work Experience

<b>Léman Micro Devices SA</b>	<b>Vice President of Software &amp; Architecture</b>	2013.07 – 2023.01	<b>10 years</b>
Led and directed a multifaceted software / IT/IS program, team management, led processes, architectural design, system administration, cloud, algorithm implementation, cybersecurity, data protection, support IT/IS part of our QMS. We have raised about 25 millions, B2B and B2B2C. Reporting to the CEO. <i>Experience:</i> team management, project and product management, strategy with board / CEO / team, scrum & agility, IEC 62304, ISO 13485, continuous integration, AWS / OVH / alibaba & multi-cloud, global architecture, android, java, JEE, python, machine learning, signal processing and bluetooth, mysql, ubuntu server, ETL, git, RedMine, API definition, technical communication and discussion of integration with customers (white label – 2 of the top 5 phone manufacturers), architecture of the digital side of our manufacturing process.			
<b>Sword Consulting</b>	<b>Senior developer / consultant</b>	2012.09 – 2013.03	7 months
<b>SDATAWAY</b>	<b>Software Engineer and Project Manager</b>	2011.10 – 2012.04	7 months
Connect coffee, milk and vending machines to a cloud solution, display statistics, strategy to restock these machines. C2B and B2B. Communication with a big multinational in Vevey. <i>Experience:</i> HTML5, javascript, JEE, mysql, AWS, ETL, C, embedded linux.			
<b>ElanIt / IMD</b>	<b>Mobile Architect and Developer</b>	2011.09 – 2011.10	2 months
<b>Poken</b>	<b>CSA, Chief Software Architect</b>	2008.06 – 2011.08	<b>3 years</b>
Led a team in Switzerland and Romania to develop and implement a product mixing hardware and software, architecture and managing infrastructure on AWS, conducting technical relations. We have raised about 10 millions, our product was on the market, B2B and B2C. Reporting to the CEO. <i>Experience:</i> Team Management, due diligence, AWS, JEE, jsf, nfc, mysql, html, javascript, android, java, API.			
<b>AdsClick</b>	<b>Software Architect and Engineer</b>	2004.12 – 2008.05	<b>3.5 years</b>
Architecture and implementation of our high-performance ad-server, including communication protocols, structures, and fraud detection engine. We have raised about 10 millions, our product was on the market, B2B and B2C. Reporting to the CTO. <i>Experience:</i> Solution architect, MySQL, Java, PHP, Tomcat, ETL, cybersecurity / fraud detection, linux (redhat), system administration, technical communication and alignment with orange in France.			
<b>Epsic</b>	<b>Teacher computer systems</b>	2004.06 – 2008.06	4 years, 20%
<b>IMD</b>	<b>Java developer, social networks researcher</b>	2004.03 – 2004.11	8 months
<b>Sunrise, Zurich</b>	<b>Java developer, data processing</b>	2003.03 – 2003.09	7 months

## Training & Education

TOGAF	Enterprise Architecture Foundation	August 2023
Scrum	Professional Scrum Product Owner	July 2012
	Professional Scrum Master	June 2023
<b>Executive MBA EPFL – Management, Technology &amp; Entrepreneurship</b>		December 2013
Joint program between EPFL, HEC UNIL targeting entrepreneurship, innovation and management of technology.		
<b>Engineer in communication systems EPFL - Master of Science Msc</b>		October 2004
Master Program in Mathematics, Statistics, Physics, Computer Science and Electrical Engineering.		

## Languages

French	Native proficiency
English	Full professional proficiency
German	Limited working proficiency

## Interests

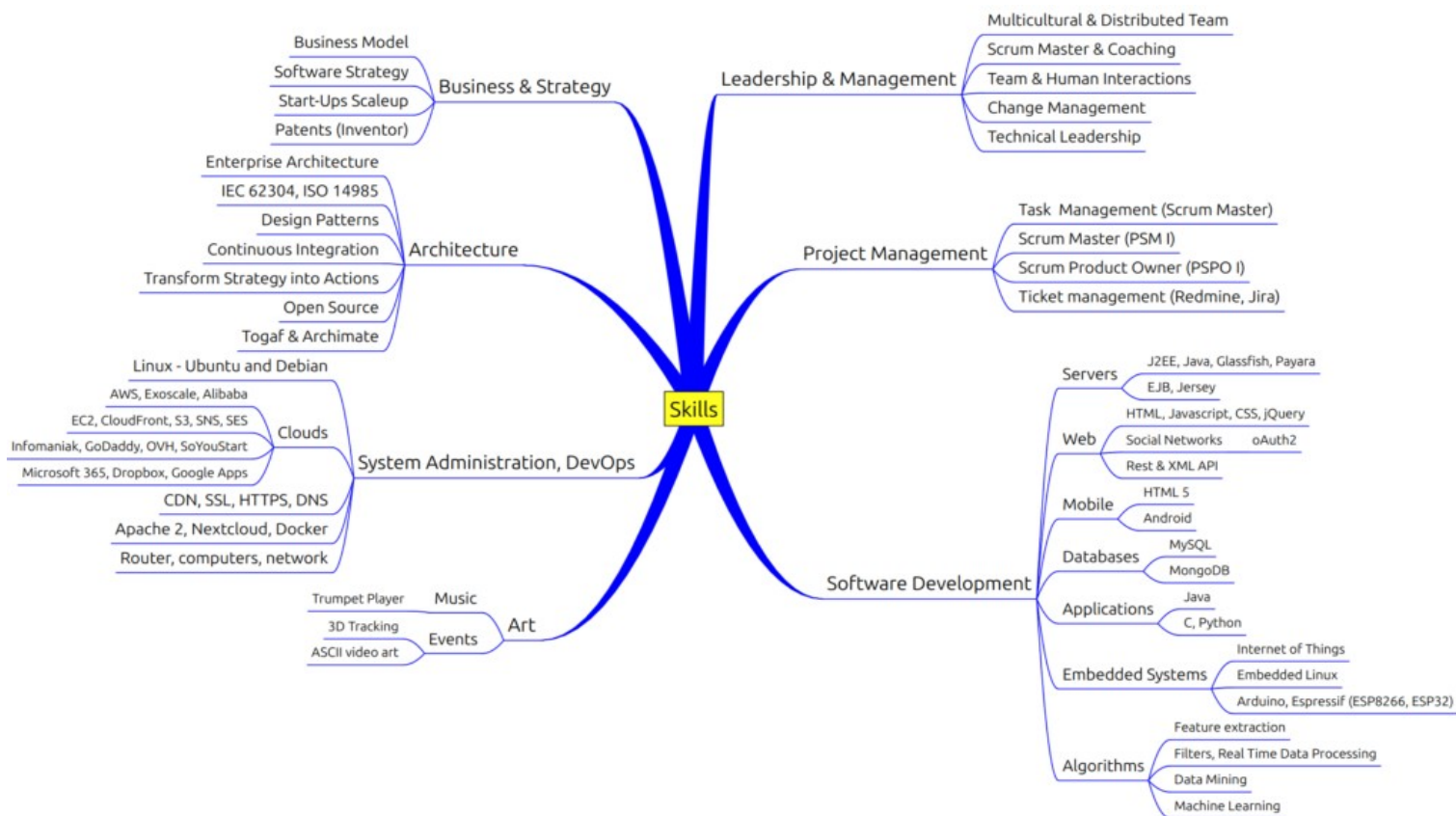
- Art & Sport** Trumpet player (Brass band “Fanfare du Jorat”), Swimming, Biking and Skiing (Casual)
- Associations** President of the General Council of my Municipality (2016 - 2019), EPFL Alumni, EMBA Alumni.
- IS / IT / IoT** Home automation (IoT), Raspberry, Arduino, Espressif, 3D printing, Machine Learning.

## Skills

**Startups Enterprise Architecture** : Building and maintaining a sustainable technical environment in a fast evolving scope. Aligned our development standards with IEC 62304 and ISO 13485.

**Management and leadership** : Developing efficient teams and positive working environments. I focus on creating a comfortable, secure and happy working environment using tools such as agility, Scrum, and effective communication.

**Strategy and innovation** : Facilitating communication between developers and other team’s members, and develop company’s strategies that focus on modern IT/IS capabilities and limitations.



## Detailed Skills

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### **Leadership & Management** ( 13 years )

Manager of a multicultural distributed team ( ~10 people), certified scrum master & product owner, team & human interactions, change management, technical leadership, lead and set IT/IS/Software process.

### **Architecture & Norms** (17 years )

Togaf, enterprise architecture, design patterns, IEC 62304, ISO 13485, UML, transform strategy into actions, open source.

### **Business & Strategy** (10 years )

Business model, software strategy, startups, scaleup, innovation management (patents).

### **Project Management** (10 years )

Task management, scrum master (PSM I), scrum product owner (PSPO I), set priorities, lead defining release, distribute information, prince 2, ticket management (Redmine, Jira).

### **Software Development**

Servers ( 17 years ): J2EE, glassfish, payara, EJB, Jersey, PHP.

Web ( 18 years ): HTML 5, javascript, CSS, jQuery, OAuth2, Soap, rest, soap & XML API.

Mobile ( 12 years ): Android, NFC, bluetooth.

Databases ( 18 years ): MySQL, MongoDB.

Applications ( 20 years ): Senior java developer, python, bash, C.

Embedded Systems(11 years ): internet of things, embedded linux, Arduino, Espressif (ESP8266, ESP32).

Algorithms (15 years ): Feature extraction, filters, real time data processing, data mining, machine learning.

### **System Administration, DevOps** ( 17 years )

Linux – Ubuntu and Debian.

Clouds AWS (Amazon Web Services), exoscale, EC2, cloudFront, S3, SNS, SES.

Infomaniak, GoDaddy, OVH, SoYouStart.

Microsoft 365, Dropbox, Google Apps.

CDN (akamai, cloudfront), SSL, HTTPS, DNS.

Apache 2, nextcloud, docker.

Jenkins, Hudson - continuous integration.

Router, computers, network.

### **Art & Manufacturing**

Music – Skilled non-professional trumpet player. ( 35 years )

Events - 3D tracking, ASCII video art, 3D conception and reconstruction, 3D printing, laser cutting.

## More detailed information

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Detailed professional experience, work certificates, diploma, recommendation letters, portfolio, can be downloaded from my web site or provided on demand. <https://cv.nuage.ch> or [gabriel.klein@nuage.ch](mailto:gabriel.klein@nuage.ch)

## Annexes : Detailed Professional Experience

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I have worked for many different startups and adapted my role to the maturity of the company, needs, team size and finances. Experiences in companies of more than one year are **highlighted in purple**.

### **Léman Micro Devices SA** (2013.07 – 2023.01, 10 years) as **VP of Software & Architecture**

LMD is a startup developing a Bluetooth-based and I2C, ISO 13485 medically certified solution to monitor blood pressure using a mobile phone. Our team focuses on hardware, mobile and API development, with a B2B/B2C product targeting mainstream markets. As the leader of software excellence and architecture, I have built and managed a team, build the main components and architecture and developed key algorithms for our product. As a validation for my eMBA, I have defined a business model based on gamification for user retention and a technical / software strategy for the company. In July 2022, Leman Micro Devices SA assets were transferred to Signature Investments LLC.

#### Management

- Drive IT program of continuing development and innovation.
- Define vision and strategy with other VP, board.
- Coach, build and Manage IT team (average of 7 people): Scrum, Hiring, reviews, coaching, priorities and facilitate communication.
- Owner of the IT/IS Quality and Process, clarification of projects, priorities, and architecture driven on data protection. Alignment with ISO 13485, IEC 62304, Prince2, RGPD, QMS.
- Manage projects and releases: Dev, Stage, Prod, initialization and closure of releases.

#### Infrastructure

- Drive and administrate the IS infrastructure: costs, life cycle and upgrade of computers.
- Office 365 management, Dropbox then Nextcloud, Servers (OVH / SoYouStart), adobe.
- Cloud management: Alibaba (for China), AWS (EU, US, CH, rest of the world): EC2, SNS (SMS), SES (Email), S3

#### Architecture

- Define high level structure architecture and communication between components (Calibration, Hardware, Cloud storage, Phone, data mining): Bluetooth, I2C, Rest API, Files (json and XML).
- Define and clarify integration by third party: Rest API, Jar (JAVA).
- Drive the choice of libraries, programming language in collaboration with owners of the different parts (Java, R, Python, Glassfish then Payara, Labview, Excel .... ).
- Define and implement our continuous integration systems: Jenkins, Maven, gradle.
- Quality of software: Align with good process (IEC62304, ISO 13485).
- Cybersecurity, RGPD and data protection, system of pseudonymization of data.
- System to store trial data and IDT (Internal development tests) data.

#### System Administration

- Servers: Ubuntu Server, keep them up-to-date, security.
- Installation of servers and services: Apache2, Glassfish, Payara, MySQL, R, python, Nextcloud, Wordpress, DNS (GoDaddy), SSL certificates (Let's Encrypt), Redmine, Gitblit, Jenkins.
- Backups process.

## Languages and algorithms

- Implement most of the algorithms (Java) for real time extraction of features from our signals, calibration, driving of user, implement filters.
- Implement in collaboration with data analysts algorithms in Java (People were working on Matlab, Python, excel for data mining, algorithms optimization). I was working in collaboration with them to improve our algorithms and implement them in Java.
- Definition of the format used by our “viewer” (R and html/js) and other data mining tools (Python and Excel): JSON, CSV, log files.
- Implement core functionalities of our Android application (I particularly love business logic).
- Implement our API server and administration interfaces using a Java EE 6 server: Jersey (Rest/XML APIs), JSF / JavaServer Faces 2, OAuth 2, JPA, MySQL, Enterprise Java Bean, MQTT, Annotations.
- Support and improve some scripts written in Python.

## Other

- Patents and PCT
  - <https://patents.google.com/patent/WO2014125431A4>
  - <https://patents.google.com/patent/WO2021124071A1>
  - <https://patents.google.com/patent/EP4076162A1>
- Basic electronic (soldering, data analysis)

**Sword Consulting** (2012.09 - 2013.03, 7 months) as **Senior developer / consultant**

During my EMBA, I have worked for sword on different missions.

- Implement an e-Coupon platform for a coffee maker : Symfony 2, MySQL, HTML5, jQuery
- Debug and implement new features on a web platform: Spring, jBoss
- Prototypes of mobile application on iOS (Junior) and HTML5.

**SDATAWAY** (2011.10 - 2012.04, 7 months) as **Software Engineer and Project Manager**

I have worked on “Internet of Things” R&D projects, dealing with our customers to define the requirements and acceptance criteria.

- Architect and manage projects to connect a consumer and professional machines to a cloud solution in a secure way.
- Implement functionalities on an embedded linux to communicate with a consumer machine, Internet of things, embedded linux (Ralink SoC).
- Create an API to collect this data and ETL process to create relevant statistics.
- Create a viewer to display this data. The viewer was targeting a technical team for remote analysis, sales and business: HTML 5, Javascript, development in JEE, PHP and MySQL.

**ElanIt / IMD** (2011.09 - 2011.10, 2 months) as **Mobile Architect and Developer**

IMD was looking for a mobile architect and developer to quickly develop an application used by students to download and view videos on their phone.

- Architecture the solution.
- Implement a version on the BlackBerry using Java 2 Micro Edition (first month).
- Implement a version running on android using android SDK. (second month).
- Integration with SOAP .net SAP web services (Login, access rights, source of videos)



**Poken (sold to GES)** (2008.06 - 2011.08, 3 years) as **CSA, Chief Software Architect**

In this startup of 5-30 employees, we created an event-oriented product that facilitated interactions between people. Our solution combined hardware, web, and cloud services. I was the key responsible for our IT department and had multiple roles that adapted to the company's needs.

#### Management

- Develop the vision and architecture of the product based partly on my EPFL master project.
- Define the product goals, coach the team to follow an agile process, define priority of tasks.
- Leading and coaching a team based in Switzerland, Romania and California of about 5-7 people.

#### Infrastructure

- Manage our solutions running on dedicated machines (Redhat), improve performance using akamai and special flags on our apache2 configuration. (Start of the company).
- Manage our solutions running on AWS (EC2, S3, Cloudfront)

#### Architecture

- Due diligence, technical relation with our partners.
- Choice and validation of our technology: J2EE, MySQL, PHP, Glassfish, Jersey
- Lead development methodology: Hudson, subversion (SVN), ANT
- Define the secure algorithms to exchange token (XXTEA), secure exchange using NFC

#### Languages and algorithms

- Setup, optimization of our database using MySQL 5.5
- Development of the core of Poken in JEE, development of our API
- Development of the server using EJB, JPA, JSF, Jersey, XML and Xpath
- Android, development of the application using NFC

**AdClick** (2004.12 - 2008.05, 3.5 years) as **Software Architect and Engineer**

We created an alternative to Google AdWords and AdSense in the domain of on-line marketing. I have built the contextual AdServer, the cyber-security fraud detection engine and data analysis system. I worked on the most sensitive parts of the platform in term of performance, high availability and quantity of data. We were serving ads on the front page of Wanadoo (1000 requests per seconds) and have developed an advertiser and publisher platform for Yahoo Japan.

#### Development

- Develop high performance ad servers using tomcat able to take data from different sources (internal system, external XML streams of ads.)
- Extract keywords on pages that integrate our script using JavaScript, find relevant ads from our different Ad Servers (contextual advertising). Injection of a Javascript code on publishers.
- Develop different formats to display ads. (IAB, custom formats, tagcloud).

#### Data mining and security

- Transfer logs of our AdServer to a data mining server, merge these logs using MySQL requests.
- Optimize MySQL to be able to process up to 1000 entries per seconds.
- Slow down, stop advertisers based on their budget, display most relevant ads, create billing statements.
- Detect frauds using IP, referee, browser information and contextual information.

#### Technical infrastructure

- MySQL, Java, PHP, Tomcat, Eclipse, Jdev, Ant, Junit, XML

**Epsic** (2004 - 2008, 20%) as **Teacher computer systems**  
I have given nightly courses to future “ES technicians”. My goal was to share my passion in IS/IT, and let them understand and learn the bases of computers, development and embedded systems.

**IMD** (2004.08 – 2004.03, 2004.11- 2004.10) as **Java developer  
then social networks scientist**

I was first hired as a java developer, then continued with my master project.

- Develop web pages using JSP, Jdev, eclipse and oracle.
- Conceive and develop an application in java and then an applet as part of my master project. The goal was to create a way to facilitate networking between students and help them to “break the ice” by finding common patterns: XML, image analyzing, java development, text analysis.  
<http://www.nuage.ch/projets/networking>

**Sunrise, Zurich** (2003.03 – 2003.09) as **Java developer**

I had the opportunity to do a kind of “internship” in Sunrise, Zurich.

- Synchronization of INA numbers (0900, 0906, ...) from a FTP to an oracle database, build interfaces used by the support team to query these numbers: CSV, FTP, Oracle, ASPX / C#, .Net
- Develop an application in Java / JSP using tomcat and eclipse (Network provisioning system)). Train some people on object oriented programming and java.

**Fabric | CH** (1998.11 - 2000.06, 20%) as **HTML, C++ developer**

Fabric.ch is a web designer company in Lausanne.

- Digital version of a building plan for a big municipality: javascript, css, html, ASP, oracle database.
- R&D projects used as an example in the D-Club analyzing images and creating effects. As an example I was creating ASCII art using a video stream: C++, algorithms.

**EPFL** (During my studies) as **Websites developer, C++**

During my studies, I had the chance to work on many really interesting different projects, in particular.

- Implement CSS / HTML website based on a design (globalcomputing, Dr. Pearl Pu Faltings)
- Virtual museum in VRML
- 3d tracking system (Like the motion controller of PlayStation but 7 years before them), navigation in the “visible human”: C++, DirectX, signal processing. Used in two museum “Foundation Claude Verdan” in Lausanne and “Kulturama Museum” in Zurich. (Professor R. D. Hersch).

**Consultant** (Since 1996) as **IT/IS services for associations and SME**

Websites for associations and small companies, help with IT/IS systems (data recovery, remove virus, update software / hardware, help with IT process, mails) : Wordpress, HTML, Javascript, Ubuntu Servers, DNS.