1100 Chemin de lacome
64370, Saint-Médard

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Skills

Proficiency

Backend	★★★★★
Formal Methods	★★★★☆
Performance	★★★☆☆
Frontend	★★☆☆☆

Programming

Java

JavaScript

C ● C++

BASH

SQL ● MDX

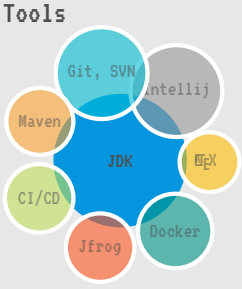
Frameworks

Spring Cloud Sleuth	★★★★☆
Spring Boot	★★★★☆
React/Next.js	★★★☆☆

Cloud Services

AWS - S3	★★★★☆
Azure	★★★☆☆
GCP	★★☆☆☆

Tools



About Me

Technical Lead with strong technical skills. Autonomous, self-motivated and curious, but mostly not afraid of new challenges and eager to learn new technologies. Open minded, sociable and used to work in a multicultural collaborative environment. As an engineering manager, I strive at making a great product for both users and developers : Foster innovation, promote best practice and ensure engineers' happiness.

Experience

Open Contributor 2023/2024 — SquashQL - Remote, France

SquashQL is an open-source SQL query engine designed to streamline the process of building multi-dimensional queries. At its core, it acts as a middleware layer that stands between SQL databases and multiple clients or front-end applications.
In addition to my professional and leisure pursuits, I'm an enthusiastic contributor to SquashQL. Passionate about advancing the realm of database technologies, I actively participate in refining and enhancing its capabilities, collaborating with fellow developers to drive innovation and foster a thriving community dedicated to empowering users with robust and efficient data management solutions.
Keywords: SquashQL, SQL, Cloud DB.

09/23 - Now — R&D Software Engineer Freelance — Huawei - Remote, France

Grenoble Fermat Lab. is responsible for advanced technical research and development of Model-based and Formal methods for different business domains including Automotive and ICT. The team is responsible for building formal modeling, simulation, verification and code generation tools for the design and development of trustworthy and efficient embedded software.
My responsibilities are centered around our Model-Based Design (MBD) platform's simulation engine, involving benchmarking both the Java interpreter and the C++ simulation engine for optimal performance. The ultimate goal is to implement, test and deliver well-architected enhancements for optimal performance and great user experience. Additionally, I provide support to the team in building robust and high-quality software. I actively explore formal modeling technologies to design and develop trustworthy software solutions, contributing to our team's ongoing success in achieving the company's objectives. Keywords: Formal Methods, Verification, Concurent System, Simulation.

06/19 - 09/23 — Technical Lead — ActiveViam, Remote, France

As part of the R&D team, I design and build Atoti, the in-memory real-time analytical database. Duties:

- Product Developement: Design, build, test and deploy of Atoti Java API capabilities: Aggregation engine, real-time updates, distributed computing, MDX querying
- Monitoring: Involved in enhancements and imlementations of Atoti Application Performance Monitoring stack: Tracing, metrics and logs. Stack: Zipkin, Logstash, Grafana, Prometheus, Docker.
- Support : Solving performance issues and help the clients using the APIs
- Internship and university project supervisor : Maximise the impact of new JDK capabilities in Atoti Java API LOOM and Panama)

Keywords: In-Memory, Distributed System, Monitoring, REST, MDX, OLAP.

Soft Skills

Languages

English ★★★★★
French ★★★★★
Arabic ★★★★★
Spanish ★★☆☆☆
German ★☆☆☆☆

09/18 - 06/19 **R&D Software Engineer** — INGIMA LABs, Paris, France

Responsible of R&D studies, proof of concepts development and their industrialization for clients and partners. Duties:

- State of the art and literature research
- Projects roadmap and clients meetings
- Architecture, development, testing and documentation

Projects:

- PackDiff: Extraction and comparison of PDFs text and graphical elements using different algorithms (Smith-Waterman/Needleman-Wunsh for text comparison and Hungarian algorithm for computing the best matches). The project was implemented as micro-services using spring-boot framework.
- OCR prototype for a client specialized in insurance brokerage and advice.

10/14 - 07/18 **Full Time Researcher (PhD)** — Verimag Laboratory, Grenoble, France

Formal Methods for Distributed Real-Time Applications.
Study and develop rigorous system design methodologies for Distributed Real-Time applications. These methods should be implemented through intermediate model transformation ensuring correctness, until reaching a concrete implementation.
Keywords: Distributed Real-Time Systems, Formal Methods, Timed Automata, Verification, Communication Delays, Clock Drift.

03/14 - 08/14 **Final Engineering Project** — SAP SE, Walldorf, Germany

Vectorization of compression algorithms using SIMD instructions:

- Leverage Intel new set of instructions (SSE4, AVX2) for high performance and optimization purposes
- Compression algorithms like Simple8/9 and Golum
- SAP HANA database concept
- Literature Research

12/13 - 03/14 **Internship** — Transportation Research Center, University of Nevada, Las Vegas, USA

Business Intelligence Project for the Nevada Department Of Transportation:

- Dimensional modeling and Data warehouse conception
- Data integration, PL SQL

Education

03/2019 Machine Learning by Stanford University on Coursera.
Certificate earned at Wednesday, March 20, 2019 3:09 PM GMT (Link here)

2013 - 2014 **Exchange Student in Computer Engineering** — Iowa State University, Iowa, USA

Main subjects: Advanced Computer Architecture, Reconfigurable Systems, Distributed Software Development.
GPA: 3.89.

2011 - 2014 **Engineering Diploma** — Grenoble INP PHELMA/ENSIMAG, France

Specialization: Embedded Software and Systems.
Main subjects: Mathematics, Programming, Operational Research, Operating Systems, Real-Time Embedded Systems, Hardware Design.
Thesis: "Vectorization of compression algorithms using SIMD instructions".
Realtors: Prof. S. Viardot, Ing. R. Schulze, Dr. T. Willhalm.
Thesis activity carried out during the final year project at SAP SE.

2008 - 2011 **First Scientific University Cycle Degree** — ENPEI, Algiers, Algeria

Engineering Scientific Preparatory School.
Main subjects: Mathematics, Physics, Computer Science.

Projects

12/2013 — Reconfigurable System Project — Iowa State University, Iowa, USA
Working in pairs on the conception of an old school game (bricks) on a SPARTAN-3E FPGA: Hardware Design, Keyboard and VGA Modules, Algorithmic, Vhdl

06/2013 — Operating System - Project Manager & Developer — Grenoble INP ENSIMAG, Grenoble, France
Development of a Linux type operating system (C language):

- Virtual Memory, Processes Communication (Shared Pages, Message queues)
- User/Kernel Separation (ring 0 & ring 3)
- Keyboard & Mouse Drivers and multi-shell

01/2013 — Software Engineering Project — Grenoble INP ENSIMAG, Grenoble, France
4 persons team working on the implementation of a mini-java compiler: Compilation Theory, Formal Language Theory, ADA & Assembly

Summer Schools

03/2015 — Engineering Autonomic Systems (ASCENS Project) — IMT, Lucca, Italy
theoretical, practical, and technological issues related to collective self-aware autonomic systems - so-called ensembles.

09/2017 — Mixed Criticality System (DREAMS Project) — UPV, Valencia, Spain
Keynotes, tutorials and hands-on session delivered by academic and industry experts about advances in MCS.

Publications

M. Dellabani, J. Combaz, S. Bensalem, M. Bozga
Local Planning Semantics : a Semantics for Distributed Real-Time Systems
Leibniz Transactions on Embedded Systems, Vol 6, No 1, 2019

B.L. Mediouni, A. Nouri, M. Bozga, J. Combaz, A. Legay, S. Bensalem, M. Dellabani
SBIP 2.0: Statistical Model Checking Stochastic Real-Time Systems
Automated Technology for Verification and Analysis - 16th International Symposium (ATVA 2018), Los Angeles,October 7-10, 2018

M. Dellabani, J. Combaz, S. Bensalem, M. Bozga
Knowledge Based Optimization for Distributed Real-Time Systems
Proceedings of the 24th IEEE Asia-Pacific Software Engineering Conference (APSEC 2017), Nanjing, China, December 4-8, 2017

M. Dellabani, J. Combaz, S. Bensalem, M. Bozga
Local Planning of Multiparty Interactions with Bounded Horizons
Proceedings of the 21st International Symposium of Formal Methods (FM 2016), Limassol, Cyprus, November 9-11, 2016