# Renaud Mariana

Senior Software Engineer - Backend

## My Contact

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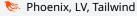
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## Skills

- 🔵 devops Aws, Kub, Azu
- Erlang, Elixir, Rust
- 🗄 NoSql, SQL, Block Storage, CQRS/ES
- 🔥 Phoenix, LV, Tailwind
- ML python, Hardware
- 🌅 Prometheus, Grafana
- 🔲 Embedded device, Smartcard

## Education Background

Grande Ecole (Computer Science)
Groupe Ecoles Centrales.

## About Me

With more than 15 years experience starting designing middlewares for smartcards to large scale systems, I'm keen to exploit my knowledge further in building, testing, operate concurrent, energy efficient systems.

## Professional Experience

### Santevet | Online booking dev-ops

**23 - Present**
France - remote

**Key Responsibilities**

- Stripe: add a card payment method to Santevet products, migrate our old stripe api to the latest
- Add Observability : prometheus / promQL / grafana
- Work on implementing a garbage collector for our Event and Data Stores.
- Solving front / back critical bugs

**Github**

- Commanded (CQRS/ES) : fix an OOM bug present for years in the commanded dependency.
- Prometheus high resolution metric : create a small memory footprint prometheus counter able to track millions of different counters, used intensively by our analytics

**Environment**

AWS - Postgres - Phoenix - CQRS/ES - EventStore - Commanded - ElasticSearch - Stripe API - promQL - Broadway - Rust

### Motorola | Full dev-ops

**21 - 22**
Glostrup, Denmark 🇩🇰

**Key Responsibilities**

- Devops for a cloud based telecom product that connects Land Mobile Radio systems over the internet.
- Specifically, write new kubernetes microservices (service-level agreement, ..) and deployed them in all regions
- Tasks like writing / running the deployment pipelines, the CI/CD integration, templates, helm chart, monitoring, logging
- SRE tasks : implement SLA measurement, on-calls, running post-mortem, improve reliability

**Environment**

Kubernetes - Helm - Docker - Elixir - Elk - Azure Pipelines - Telemetry - PagerDuty - Prometheus - Continuous Integration - Rabbitmq - Grafana - Redis - Phoenix - GraphQL.

### Kuantic | Lead

**18 - 21**
Sofia-Antipolis, France

**Key Responsibilities**

- Distributed fleet management technical interface for Stellantis
- Full refactoring of our existing stack, modernizing the erlang development process and deployments also add Elixir to our backend
- Improve the reliability and extensibility of the stack with message queues
- Add a big-data pipeline (Elixir) for data analysis (MapReduce, SQL backend) and third-party data export
- Add tools like Elastic Search and Elixir Dashboards
- Troubleshoot some issues

**Github**

- A local key-value cache
- A nif cache for openstreetmap

**Environment**

NoSQL · MapReduce · Erlang · Distributed Systems · RabbitMQ · Broadway · Elixir · SQL · Docker ·

Kubernetes · Phoenix · Elastic Search

### Online SAS | R&D Engineer
**13 - 17**
Paris, France

**Key Responsibilities**

- Architect a fault tolerant distributed storage with hot code reloading
- Implement a flexible, lightweight protocol layer (nbd) in erlang, allowing for example to move a customer storage to other geographic regions while the storage is still in use
  *topics:* live release upgrade, app profiling, riak LRU cache, blocks dependency graph, users volume live relocation, riak node crash recovery, data flow performance analysis, webmachine rest api
- Implement a fraud detection system based on **emergent machine learning / AI** technologies. Made the technical decisions (scikit versus legacy), build the features and python workflow (DB, Rest API).
  *topics:* scikit-learn, python, postgresql
- San servers as IOT (POC) for live snapshots and statistics data collection
  *topics:* qemu-nbd, iot
- Distributed testing of AWS S3 storage backend
  *topics:* basho_bench, tsung

**Github**

- a spatio-temporal logger

**Environment**

Scikit-Learn · PostgreSQL · NoSQL · Storage Area Network (SAN) · Machine Learning · Erlang · Distributed Systems · Quickcheck · Docker · Qemu · Linux Kernel

### Meetic | Lead
**10 - 13**
Paris, France

**Key Responsibilities**

- Architect and code new requirements for the chat system (+200K users)
- Add the js xmpp protocol (bosh) extension
- Package, benchmark, experiment new ideas in erlang :
  - Develop a jabberd roster (contact) in NOSQL (Riak)
  - Develop a game framework as a cluster extension for Ejabberd to supports simultaneously ten of thousands human interactions (NOSQL)
  - A realtime 3D visualization tool to monitor chat traffic

### Consultant | Embedded software
**02 - 10**
France

**Key Responsibilities**

- Based on the 18Crypt profile, architect of the NXP mobileTV CAS feature (conditional access); this multi sites project involved people from the Netherlands, India and Ireland (S3)
- Add multi-threading (EMM/ECM and Tuner) for the Philips STB DLI (Device Layer Interface)
- Develop a porting layer for PVR services based on ST40 crypto security
- Development of next generation SIM & KDA conditional access for Orange DVB-H mobiles
- Semi-formal testing of the sim software using Logic Programming
- Customize VLC to decode the rtp h264 ismacryp stream

### CP8 Transac | R&D Engineer
**97 - 02**
Louveciennes, France

**Key Responsibilities**

- Javacard (3 patents), ensure INRIA and CP8 are aligned in their developments of a virtual machine and secure loader
- POC: french banking protocol B0' in javacard
- Sms-based E-purse transaction system (Proton smartcard and server)
- Add multi-threading to the SimToolkit (3 patents)
- Java bytecode optimizations - benchmarks

**Github**

- Prolog PC/SC interface, run semi formal tests in logic programming

## Projects

### High resolution prometheus counter
Create a small memory footprint telemetry_metrics_prometheus_core counter able to track millions of different counters.

**Superls**

A multi volumes, files tokenizer, indexer and search engine.

**Caching systems**

Small libraries on top of a NOSQL database.

**Spatio-temporal logger**

A tiny library to debug concurrency in distributed systems both in time and space.

**Hardware clock**

ALSA hardware based clock (NIF).

**Ejabberd Game framework**

Provides convenience for multi player games.

## Computer Skills

**Systems**

Kubernetes / helm / docker, azure pipelines, low latency Erlang/OTP, github actions, Phoenix

Linux kernel block storage, Riak (nosql), CQRS/ES, sqlite, postgresql, tsung, redis, C++ Coroutines.

**Observability - Prediction**

PromQL - Grafana - Scikit-Learn - High resolution metrics

**Programming Languages**

Erlang / elixir, C/C++, JavaScript prototype, java-bytecode, SQL, ...

**Protocols**

AMQP, NBD, aws, xmpp, iptv, TR-069, mpeg-4 streaming (RFC 3984), ISMACryp1.0, Etsi-Tetra.

**Embedded, Smart Card**

Linux, Nucleus, RTKI, VME, JavaCard, Android.

EMV, SIM Card, B0' Banking Application, E-Purse, OpenPlatform.