

# Pascal Grange, PhD

Senior Backend Engineer - Distributed Systems – Extreme Programmer

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Regularly attend and sometimes speaks in agile software related conferences including (in french):

- *Hunting for false pretenses* — [https://bit.ly/hunting\\_fails](https://bit.ly/hunting_fails)
- *Test Driven Development of Ansible roles* — [https://bit.ly/tdd\\_ansible](https://bit.ly/tdd_ansible)

Maintain or contribute to several open-source projects, including:

- bash unit testing enterprise edition framework for professionals: <https://bit.ly/bash-unit>
- risno (discontinued) real estate search engine (Javascript, Python, elasticsearch): <https://bit.ly/r1sno>
- soap-dust (discontinued) Java soap library (Java, xml, xslt): <https://bit.ly/soap-dust>

English: fluent / French: native / German: some basics and willing to learn more

## Professional Background

### December 2023 - present: Founder

21research

Building, securing and hosting a Bitcoin Lightning node. Exploring the development of a **Lightning Hardware Wallet**. Developping LN paid services.

*Bitcoin, Lightning, eclair, Phoenix, Ledger, Scala, Kotlin, security, operations*

### September 2022 - September 2023: Senior Software Engineer - Hydra

IOG <https://iohk.io>

Developing **Hydra**, the layer 2 scalability solution for **Cardano**: increase transaction speed through low latency and high throughput and minimize transaction cost.

*Cardano blockchain, state channels, security, Open Source, Ensemble Programming, Haskell*

### May 2020 - August 2022: Senior Software Engineer

Sinch <https://sinch.com>

Expanding a local SaaS product to a global worldwide solution. Migrating from baremetal to AWS. Handling local regulations, security and total cost of ownership. Ensuring software teams autonomy.

*AWS, terraform, Cloud Development Kit, prometheus, ops'genie, Python*

Implementing 24/7 on-call duty contract to cover all timezones. Fighting against alert fatigue, identifying key critical alarms. Facilitate post-incident reviews.

*Problem Solving, facilitation, metrics, learning together*

### March 2018 – May 2020: Chief Information Security officer - Infrastructure Engineer

LGO <https://lgo.group/>

Building and securing the leading (at the time) institutional Bitcoin exchange in Europe. Approx. \$500.000.000 equivalent traded on the platform until february 2020. No major incident. *Funds are safe.*

High performance (target several millions orders per second). Test driven infrastructure as code.

Automated failure management (disk expansion, service restart, machine restart). Implementation of an

on-call contract (just in case).

*ansible, packer, terraform, consul, nomad, vault, GCP, aeron cluster, raft, opentimestamps*

In charge of writing and implementing the security policy for the company, the trading platform and funds management.

*hardware security, pentest, bug-bounty, training, risk assessment, implementation of security reviews*

## **October 2011 – May 2018 : Manager of expert teams in web, telephony and NFC**

Orange Business Services – Orange Applications for Business

Management of a team of five systems and network engineers and one project manager. Supporting change to evolve from a culture where system administration is performed *manually* to a *devops* and *infrastructure as code* culture.

*agile software development, lean-thinking, standards, technical sharing workshops, recruitment  
ansible, docker, test driven software development, git, gitlab-ci, pair-programming, mob-programming*

Frequent management of security audits, formalization of responses and follow-up of the countermeasures when needed.

In charge of designing, costing and building several customer platforms. Responsible for their quality of service, security and profitability for the company:

- multi-country web authentication platform using smartphone — *Mobile Connect*
- shared cryptography service — *Hardware Security Module as a Service*
- e-commerce website — client annual income over 150 M€
- NFC mobile payment platform
- Telephony platform with active replication over three distinct geographical areas - 100 000 calls a day

*Mastercard certification, payshield Hardware Security Modules, ncipher Hardware Security Modules  
OMS Interactive Voice Response, mobile carrier networks interconnection  
debian, redhat, ha-proxy, varnish, apache, tomcat, mysql, automation of security patches, puppet*

## **November 2005 — September 2011 : Software Developer**

Orange Business Services – CVF

Test Driven Development; frequent writing of executable specifications; building several continuous integration platforms; team leadership, project management and writing of commercial offers.

*Java, Javacard, Javascript, python, NFC, SIM card, OTA, Voice XML, FitNesse  
subcontractor management, partnership coordination*

## **September 1999 — August 2005 : Teacher in higher education**

ENSEIRB – Université Bordeaux 1 – IUT Bordeaux 1

## **Education/training**

2022 — Strategic Domain Driven Design - *Maxime Sanglan-Charlier*

2019 — FunAr functional architectures through practice — *Arnaud Bailly and Frederic Merizen*

2016 — LEAN and Operational Excellence — CUBIK Partners

2015 — Certified *ethical hacker* — EC-Council — Sysdream

2013 — Neuro-Linguistic Programming Technician — L'Institut de formation PNL

2005 — Ph.D in computer science — *Distributed Systems: Transparency, Hiding, and Associated Tools*  
Université Bordeaux 1, Mention Très honorable