Pierre Besson

Full-Stack and Dev-Ops Software engineer

Software Engineering Skills

Development

Back-end development	Java, Spring, Spring Boot, Spring Cloud, JUnit, Python, FastAPI, Node.JS
Front-end development	JavaScript/Typescript, Angular, React, JQuery, Bootstrap, HTML, CSS, Webpack, Jest
Data persistence	SQL (MySQL, PostgresSQL), JDBC, Hibernate, Spring Data, Cassandra
Tooling	Maven, Gradle, NPM, IntelliJ, JHipster
Distributed systems	REST, SOAP, Websocket, GRPC, Kafka

Operations

Containers	Docker, Podman, Kubernetes, ArgoCD, Istio
Cloud	AWS, GCP, Digital Ocean
System Administration	Linux, Bash, SystemD, Terraform, Ansible
CI/CD	Gitlab CI, Github Action, Jenkins
Monitoring	Prometheus, Alertmanager, Loki, Grafana, Tempo, PagerDuty, Zenduty
Security	Hashicorp Vault, Cloud IAM, LetsEncrypt, Yubikey

Blockchain

Protocols	Polkadot / Substrate, Ethereum	**Libraries**	Polkadot.js, Ethers.js, Web3j
Clients	Polkadot, Substrate-based blockchains, Ethereum, OpenEthereum, Hyperledger Besu		

Education

2016	**Engineer Degree**, *Information Systems Architecture*, INSA de Rouen, Normandy.
2013	**Integrated Preparatory Cycle**, *Science and Technology for the Engineer*, INSA de Rouen, Normandy.
2010	**Scientific Baccalaureate**, *Lycée Auguste Renoir*, Asnières-sur-Seine.

Professional Experience

Independent Software Consultant

June 2023 - Present

DevOps Team Lead, *Parity Technologies*, Remote, Infrastructure Team management.

- **Team Leadership:** Led a team of 5 to 7 DevOps engineers, providing guidance, mentoring, and performance evaluations.
- **Project Management:** Coordinated and managed our internal infrastructure as well as blockchain node operations across testnets and mainnets in the Polkadot ecosystem.
- **Cloud Management:** Oversaw a successful initiative to accurately report and optimize cloud infrastructure costs, achieving a 50% cost reduction within six months.
- **Cross-team collaboration:** Worked with other teams within the organization to align DevOps strategies with business goals.
- **Security:** Collaborated closely with the security team and DevSecOps to implement best practices in our infrastructure and deployment processes.

Nov 2020 - June 2023	**DevOps Engineer**, *Parity Technologies*, Remote, <u>Blockchain operations</u>. **Day to day tasks :**

- Operated and monitored mainnet and testnet nodes of the Polkadot and Kusama blockchains, as well as parachains (e.g., AssetHub, Bridge-Hub).
- Operated and monitored private Ethereum and Substrate nodes in fully managed networks.
- Deployed and monitored internal software, tools, and CI/CD automation leveraging technologies such as Kubernetes, Terraform, Ansible, and HashiCorp Vault.
- Developed custom tooling, such as *paritytech/testnet-manager* which offers a UI and API to rationalize our operations of Polkadot testnets.

Significant contributions :

- Led the Testnet team responsible for operating Parity's public-facing Polkadot test networks (Westend, Rococo), including its system parachains.
- Designed a Kubernetes-based deployment of Polkadot testnets that can scale to 1000 validators and 100 parachains in minutes.
- Developed automation to help developers deploy experimental node code to our internal sandbox test network in a self-service manner.
- Overhauled the AWS infrastructure of a private Ethereum network operated on behalf of the United Nations World Food Programme (Building Blocks project).
- Migrated a production Ethereum blockchain to new infrastructure.
- Migrated a legacy Ethereum chain to a Substrate-based EVM compatible solution.
- Implemented Disaster Recovery processes for Blockchain nodes.

Liquidshare

June 2019 - October 2020	**Site Reliability Engineer**, *Liquidshare*, Paris, <u>Blockchain-based platform operations</u>. **Day to day tasks :**

- Managed the Liquidshare platform running on cloud providers (AWS, GCP) using Terraform.
- Managed cloud managed networks (VPC), container orchestrator (Kubernetes), service mesh (Istio), database (PostgreSQL), and message queue (Kafka).
- Managed the CI/CD infrastructure: GitLab, Jenkins, Nexus, Build runners.
- Developed custom tooling for continuous deployment using Kotlin, Go, and Python.
- Maintained individual deployment pipelines for over 20 Java-based microservices and several UIs deployed in Kubernetes across 4 environments (dev, QA, UAT, and prod).
- Managed the operations of a blockchain cluster based on Hyperledger Besu.
- Implemented security best practices including secret management (Vault), encryption at rest and in transit, vulnerability scanning, policies enforcement and firewalls.
- Handled production incidents.

Significant contributions :

- Developed a CI/CD pipeline for solidity smart contracts deployments and upgrade (node.js, openzeppelin, Gitlab CI)
- Developed a fully automated hotfix process utilizing webhooks and deployment pipelines to help developers go from a JIRA ticket to the safe deploy of a hotfix code patch in production.
- Deployed a production Hashicorp Vault cluster to GCP following best practices and implemented a secure set of Vault policies suitable for Liquidshare use of the tool (secret management, transit encryption).
- Deployed a monitoring infrastructure using Prometheus, Alertmanager and Grafana to monitor blockchain nodes.

Consulting work for Ippon Technologies

May 2018 - May 2019   **Full-stack developer**, *Renault Digital*, <u>Microservice architecture and AWS</u>.

Development of a car configurator platform (back-end + front-end) for use on the car maker main website for the following brands: Renault, Dacia and Alpine.
- Development of Spring Boot back-end microservices to expose a simple car configuration API from the aggregation of various internal APIs
- Development of a React front-end using our APIs and integrated with the AEM (Adobe Experience Manager) CMS.
- Development of AWS Lambda functions to carry out batch processing workloads

July 2017 - May 2018   **Full-stack developer**, *Tessi Document Services*, <u>JHipster microservice architecture</u>.

Development, deployment and supervision on a case management solution built around the Tessi EDM (Elelectonic Document Management) in the context of paper mail digitization for a major French insurance company (tens of thousands mails digitized and handled every day on our platform).
- Back-end and front-end User Stories development
- Integration with the proprietary Tessi Datacontent EDM engine (based on Cassandra) and JBPM for workflow management
- Configuration management with Ansible and continuous deployments in production with no service interruption
- Exploitation of the open source "JHipster Console" (ELK Stack + Zipkin) monitoring solution which I developed and allowed us to achieve observability (logs, metrics and traces) of our microservice architecture.

Sept. 2016 - June 2017   **Full-stack developer**, *Paris Turf*, <u>Microservice architecture on Kubernetes</u>.

Development of a horceracing totalisator for an online betting website.
- Development of Spring Boot based microservices communicating with each other using REST
- Development of an AngularJS front-end for the operational back-office
- Contribution to setting up Continuous Integration with Jenkins
- Deployment of the microservice stack as Docker containers on Kubernetes
- Handling of production incidents

Internship & Student projects

Jan. 2016 - July 2016   **Software Engineering**, *Ippon Technologies*, <u>JHipster R&D Internship</u>.
- Contributions to the JHipster project, an open source code generation tool to create Spring Boot + AngularJS application
- Participated in the design and implementation of microservices patterns in JHipster using Spring Cloud, Netflix OSS, Docker and creation of a monitoring solution based on the ELK stack.
- Initial development of the DataMC console using JHipster: an administration console to drive the Big Data managed service offering by Ippon
- Integration of the application with a container orchestration platform based on Docker Swarm and Consul

Jan. 2015 - Dec. 2015   **ISO 9001 Certified project for CHU de Rouen**, *INSA de Rouen*, Rouen, Normandy, JHipster & DataMC.
- Creation of a RESTFUL API and a Responsive front-end to modernize the main French medical documents search engine (doccismef.chu-rouen.fr)
- University project assigned to a group of 7 students representing 25h of work per week for 2 semesters

June 2015 - August 2015   **Software development internship**, *Bancom IT Co. Ltd*, Shenyang, China.
- Participation to the development of a CRM platform for use by universities in Liaoning Province (North-East China)
- Developed my ability to adapt to a different culture and work environment (a Chinese SME)