Jean-Patrick Francoïa

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JPFrancoia
Nationality: French; Age: 34

For an up-to-date version, check my personal page: https://jpfrancoia.github.io

Professional experience

2023–Today **Lead software engineer**, *Virgin Media O2*, London, U.K
Leading a team, building a diagnostics platform

- Platform and impact: Architect and operate nationwide network fault diagnostics platform on GCP (Cloud Run, Pub/Sub, Cloud SQL). Improves detection, triage and remediation of issues; delivers £20M annual savings
- Reliability and observability: Drove adoption of SLOs, actionable alerting and GitOps; produced OpenTelemetry instrumentation guidelines that improved incident detection and response across *ca.* 30 engineers in 5 teams
- Cross-functional collaboration: Partner with Product, Frontend, Network Operations and Data teams to shape roadmap, refine requirements and drive adoption of the diagnostics platform across the organisation
- Team leadership: Manage and grow 5 engineers (mentoring, performance, objectives setting, hiring, training and workshops) while lifting standards in code quality, testing and observability
- AI exploration: development of a MCP server to enhance diagnostics through AI agents

2022–2023 (1 yr 3 mos) **Senior Site Reliability Engineer (SRE)**, *Babylon Health*, London, U.K
Reliability, observability and incident response

- Incident response and on-call: 24/7 PagerDuty rotation. Led mitigation across EKS, RDS and microservices (capacity overload, faulty releases, partner/patient issues) restoring services and protecting SLOs
- Observability platform: Standardised OpenTelemetry instrumentation. Built Honeycomb dashboards and precise Terraform-managed alerts that reduced noise, sped diagnosis and enabled proactive detection

2021–2022 (1 yr) **Software engineer**, *Babylon Health*, London, U.K
MLOps and model governance for healthcare AI

- Production data pipeline: Built compliant (HIPAA/GDPR) pipelines to anonymize and deliver regulated medical data, enhancing training and evaluation of production-grade AI models
- Model validation environment: development of a lightweight docker-compose replica of inference stack to shift validation into Azure DevOps pipeline; 7× cost reduction and simpler maintenance
- Model release workflow: Go/Postgres audit and validation app for clinicians and data scientists; enforced gating, traceability and safe promotion of models to production

2018–2021 (2 yr 7 mos) **Data/Backend engineer**, *Okra Technologies*, Netherlands
Healthcare analytics data platform and ML services

- Data pipelines: Delivered Python/Airflow feature engineering and training pipelines from scratch (Docker-based), enabling reproducible ML experimentation
- Data lake: Designed and implemented AWS Glue catalog + S3 + Athena lake; development of libraries to give data scientists self-serve query access
- ML serving APIs: Built and operated Flask/Postgres B2B prediction services with CI/CD and tests for pharmaceutical customers

2017–2018 **Postdoctoral researcher**, *University of Glasgow*, Scotland
3D printing applied to chemistry

- Development of a CAD software to simplify the design of 3D printed reactors (see paper below)
- Development of 3D printing techniques for unconventional materials (see paper below)

2013–2016 **Teaching assistant (Ph. D student)**, *Université de Montpellier*, France
Laboratories in organic and general chemistry for undergraduate students (*ca.* 200 hours)

Certification / Technical stack

- GCP Professional Cloud Architect certification: obtained December 2024. Excellent knowledge of GCP services: Cloud Run, Pub/Sub, BigQuery, Cloud SQL
- Kubernetes and Cloud Native Associate certification: obtained February 2023. Excellent knowledge of Docker, Kubernetes, Terraform, Postgres (I also self-host)
- AWS Certified Cloud Practitioner: obtained January 2022. Excellent knowledge of AWS Cloud services: EC2, S3, RDS, Glue, Lambda, etc
- Deep knowledge of Python and its ecosystem: FastAPI, Pydantic, pandas, numpy, scipy, matplotlib, scikit-learn, pytest, mypy, PyQt (GUI), etc
- Excellent knowledge of Go. Extensive experience with backend development (REST APIs, protobufs, gRPC, etc)
- AI: daily usage of AI assistants (neovim + codecompanion). Comfortable writing MCPs and fine-tuning/running models locally (*e.g.*: ModernBERT, quantized Mistral)
- Good front-end development skills (web and native): React/Typescript and Flutter/Dart
- Contributor to open-source projects: scikit-learn, aws-sdk-pandas, Apache Airflow, Cura, etc

Education

2013–2016 **Ph. D. in chemistry**, *Université de Montpellier*, France
Supramolecular chemistry, software engineering, machine learning, biosensors

- Machine learning (PCA, LDA) coupled with chemical sensor arrays (see paper below)
- Machine learning (SVM) and software development to facilitate literature survey (see paper below)
- Development of nonlinear modeling softwares for the extraction of physical constants

2012–2013 **Master in chemistry, with honours**, *Lund University*, Sweden

Published literature

Full publication list available at https://jpfrancoia.github.io/publications

- **Digitization of multistep organic synthesis in reactionware for on-demand pharmaceuticals** *Science*, 2018 - open access, citations : 229
- **Automatic Generation of 3D-Printed Reactionware for Chemical Synthesis Digitization using ChemSCAD** *ACS Cent. Sci.*, 2020 - open access, citations : 51
- **ChemBrows: An Open-Source Application Software To Keep Up to Date with the Current Literature** *J. Chem. Educ*, 2016 - open access, citation : 2
- **A KISS (Keep It Simple, Sensor) Array for Glycosaminoglycans** *Chem. Commun.*, 2015 - citations : 17

Hobbies

D.I.Y (Do It Yourself)

- Self-hosting: I use MicroK8s to run my own Kubernetes cluster at home. I self-host applications like Home Assistant and Tiny Tiny RSS. See here for an example
- 3D printing: owner of several 3D printers

Martial arts
Brazilian jiu-jitsu, Judo, Muay-thaï, Kyokushinkai karate, Krav-maga

Languages
Perfectly fluent in English, native in French, learning Spanish (B1)