

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

## Professional experience

- 2022–Today **Senior site reliability engineer**, *Babylon Health*, London, U.K
- On call rotation: available 24h/24 to respond to incidents
  - Improving monitoring and observability to increase services' health (OpenTelemetry)
  - Infrastructure deployments (IaC)
- 2021–2022 **Software engineer**, *Babylon Health*, London, U.K
- MLOps for healthcare
- Ensuring high availability/quality of medical data in a regulated environment
  - Improving a microservice architecture to test the safety of new AI models
  - Releasing AI models to production to improve patient outcome while maintaining safety
- 2018–2021 **Data engineer**, *Okra Technologies*, Netherlands
- Building analytics engines for healthcare
- Building data pipelines: from data mining to feature engineering, focus on robustness
  - Building data lakes: using AWS cloud to store/process data from pharmaceutical companies
  - Building web applications: design and maintenance of REST APIs, with CI/CD and unit tests
- 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
  - Development of 3D printing techniques for unconventional materials
- 2013–2016 **Teaching assistant**, *Université de Montpellier*, France
- Laboratories in organic and general chemistry for undergraduate students (ca. 200 hours)

## 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 (published paper)
  - Machine learning (SVM) and software development to facilitate literature survey (published paper)
  - Developement of nonlinear modeling softwares for the extraction of physical constants
- 2012–2013 **Master in chemistry, with honours**, *Lund University*, Sweden

## Skillset

- Deep knowledge of Python and its ecosystem: pandas, numpy, scipy, matplotlib, scikit-learn, Flask, SQLAlchemy, mypy, PyQt (GUI), etc. **Secondary languages:** Golang and Rust
- Good knowledge of Docker, Kubernetes, Terraform, SQL (Postgres)
- AWS Certified Cloud Practitioner: [obtained January 2022](#). Excellent knowledge of AWS Cloud services: EC2, S3, RDS, Glue, Lambda, etc
- Developer of [ChemBrows](#): a software that helps researchers to stay up-to-date with the flood of scientific literature. Uses web scrapping and machine learning (SVM) to improve efficiency (400+ users). See published paper below
- Lead interviewer for technical interviews (ca. 30 interviews)
- Contributor to open-source projects (code and bug reports): scikit-learn, aws-sdk-pandas, Apache Airflow, Cura, etc

## Selected Publications

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

- **Automatic Generation of 3D-Printed Reactionware for Chemical Synthesis Digitization using ChemSCAD** *ACS Cent. Sci.*, 2020 - [open access](#), [citations : 24](#)
- **Digitization of multistep organic synthesis in reactionware for on-demand pharmaceuticals** *Science*, 2018, **359**, 314 - [open access](#), [citations : 160](#)
- **ChemBrows: An Open-Source Application Software To Keep Up to Date with the Current Literature** *J. Chem. Educ.*, 2016, **93**, 1137 - [open access](#), [citation : 2](#)
- **A KISS (Keep It Simple, Sensor) Array for Glycosaminoglycans** *Chem. Commun.*, 2015, **51**, 17544 - [citations : 14](#)

## Hobbies

### Martial arts

Kyokushinkai karate, Brazilian jiu-jitsu, Muay-thai, Krav-maga, Sambo, Tae Kwon do

### Salsa

Cuban and L.A. style

### D.I.Y (Do It Yourself)

3D printing (owner of several 3D printers), microelectronics (IoT, MicroPython)