

Jean-Patrick Francoia

Professional experience, teaching activities

- 2018–Today **Data engineer**, *Okra Technologies*, Netherlands.
Data engineering, analytics engines for healthcare
- Building data pipelines: from data mining to feature engineering
 - Data lake design: usage of AWS Lambda, Glue and S3
 - Database design: interaction with PostgreSQL and SQLite through SQLAlchemy
 - Backend: design and maintenance of Flask apps, with CI/CD
- 2017–2018 **Postdoctoral research assistant**, *University of Glasgow*, Scotland.
3D printing applied to chemistry
Supervisor: Prof. Leroy Cronin (lee.cronin@glasgow.ac.uk)
- 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)
- Nov. 2014 **Direct mentor**, *Université de Montpellier*, France.
Supervision of a master student for 5 weeks
- 2012–2013 **Training period**, *Lund University*, Sweden.
Organic synthesis, catalysis
Supervisor: Prof. Kenneth Wärnmark (Kenneth.Warnmark@chem.lu.se)
- Apr. 2010–
June 2010 **Training period**, *University of Whitewater*, Wisconsin, United States.
Organic synthesis, chemical biology
Supervisor: Prof. Catherine Chan (chanc@uww.edu)

Education

- 2013–2016 **Ph. D. in chemistry**, *Université de Montpellier*, France.
Supramolecular chemistry, biological chemistry, sensors
Supervisor: Dr Laurent Vial (laurent.vial@univ-lyon1.fr)
- Machine learning (PCA, LDA) coupled with chemical sensor arrays
 - *In silico* generation of Lysine polymers
 - Development of nonlinear modeling softwares for the extraction of physical constants
- 2012–2013 **Master in chemistry, with honours**, *Lund University*, Sweden.

Skillset

- 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. www.chembrows.com
- Deep knowledge of Python and its ecosystem: PyQt (GUI), numpy, scipy, matplotlib, scikit-learn, pandas, Flask, SQLAlchemy, mypy, etc
- Contributor to open-source projects (scikit-learn, aws-data-wrangler, Cura, etc)
- Good knowledge of SQL, Bash, LaTeX
- Daily usage of git (github, gitlab)
- Daily usage of GNU/Linux (Archlinux and Debian-based distributions)
- Basis with Rust, C/C++, HTML, CSS, PHP

Selected Publications

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

- **Digitization of multistep organic synthesis in reactionware for on-demand pharmaceuticals** *Science*, 2018, **359**, 314 - [citations : 58](#)
- **Digitizing Poly-*L*-Lysine Dendrigrafts: from Experimental Data to Molecular Dynamics Simulations** *J. Chem. Inf. Model.*, 2017, **57**, 2173 - [citations : 6](#)
- **ChemBrows: An Open-Source Application Software To Keep Up to Date with the Current Literature** *J. Chem. Educ.*, 2016, **93**, 1137 - [open access](#), [citation : 1](#)
- **A KISS (Keep It Simple, Sensor) Array for Glycosaminoglycans** *Chem. Commun.*, 2015, **51**, 17544 - [citations : 10](#)
- **Monitoring Clinical Levels of Heparin in Human Blood Samples with an Indicator-Displacement Assay** *Chem. Commun.*, 2015, **51**, 1953 - [citations : 18](#)

Conferences

Slides and posters available at <https://github.com/JPFrancoia/PostersSlides>

8. **Welcome Genome Campus Hackathon 2018**, *Hinxton, United Kingdom*.
Medicine Discovery Catapult's challenge:
How can we combine drug and genetic data to intelligently prescribe drugs?
7. **RSC Twitter Poster Conference 2018**, *Twitter, World*.
Poster presentation
6. **JMJC 2016 (Journées Méditerranéennes des Jeunes Chercheurs)**, *Nice, France*.
Poster presentation
5. **MSMLG 2016 (Molecular Sensors and Molecular Logic Gates)**, *Bath, United Kingdom*.
Oral presentation and poster presentation
4. **JMJC 2015 (Journées Méditerranéennes des Jeunes Chercheurs)**, *Montpellier, France*.
Oral presentation
3. **MeMoSim 2015 (Modeling Methods and multiscale Simulations)**, *Lyon, France*.
Poster presentation
2. **Balard Chemistry Conferences 2014**, *La Grande Motte, France*.
Poster presentation
1. **JJC 2014 (Journées des Jeunes Chercheurs)**, *Montpellier, France*.
Poster presentation

Hobbies

Martial arts.

Kyokushinkai karate, Brazilian jiu-jitsu, Muay-thaï, 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 (MicroPython)