

# Jean-Patrick Francoia

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Nationality: French; Age: 29

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

## Professional experience, teaching activities

- 2018–Today **Data engineer**, *Okra Technologies*, Netherlands.  
Building analytics engines for healthcare
- Building data pipelines: from data mining to feature engineering, focus on robustness
  - Data lake design: usage of AWS Lambda, Glue, S3 and Athena
  - Database design: interaction with PostgreSQL and SQLite through SQLAlchemy
  - Backend: design and maintenance of Flask apps, with CI/CD and unit tests
- 2017–2018 **Postdoctoral research assistant**, *University of Glasgow*, Scotland.  
3D printing applied to chemistry  
Supervisor: Prof. Leroy Cronin ([lee.cronin@glasgow.ac.uk](mailto: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](mailto: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](mailto:chanc@uww.edu))

## Education

- 2013–2016 **Ph. D. in chemistry**, *Université de Montpellier*, France.  
Supramolecular chemistry, biological chemistry, biosensors  
Supervisor: Dr Laurent Vial ([laurent.vial@univ-lyon1.fr](mailto: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. [www.chembrows.com](http://www.chembrows.com) (400+ users)
- Deep knowledge of Python and its ecosystem: PyQt (GUI), numpy, scipy, matplotlib, scikit-learn, pandas, Flask, SQLAlchemy, mypy, etc
- Contributor to open-source projects (code and bug reports): scikit-learn, aws-data-wrangler, Apache Airflow, 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

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## 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 : 65](#)
- **Digitizing Poly-L-Lysine Dendrigrafts: from Experimental Data to Molecular Dynamics Simulations** *J. Chem. Inf. Model.*, 2017, **57**, 2173 - [citations : 7](#)
- **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 : 11](#)
- **Monitoring Clinical Levels of Heparin in Human Blood Samples with an Indicator-Displacement Assay** *Chem. Commun.*, 2015, **51**, 1953 - [citations : 18](#)

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## 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

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## 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 (IoT, MicroPython)