

# Jean-Patrick Francoia

## Professional experience, teaching activities

- 2018–Today **Data engineer**, *Okra Technologies*, Netherlands.  
Artificial intelligence analytics engines for healthcare
- 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))
- 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, sensors  
Supervisor: Dr Laurent Vial ([laurent.vial@univ-lyon1.fr](mailto:laurent.vial@univ-lyon1.fr))
- 2012–2013 **Master in chemistry, with honours**, *Lund University*, Sweden.

## Chemistry skills

- Synthesis SPPS, multistep organic synthesis
- Analysis Fluorescence spectroscopy, HPLC, NMR, ICP-OES
- Modeling Amber, Gaussian, Spartan, VMD
- Microbiology Culture of bacteria and model plants
- Other 3D printing, CAD (Onshape, OpenSCAD), electronics (Arduino)

## Computer skills

- Developer of ChemBrows (400+ users): [www.chembrows.com](http://www.chembrows.com)
- Deep knowledge of Python: PyQt (GUI), numpy, scipy, matplotlib, scikit-learn, pandas, Flask, SQLAlchemy, mypy, etc
- Deep knowledge of SQL, Bash, LaTeX
- Experience with non linear regression. Good knowledge of machine learning algorithms: PCA, LDA, Naive Bayes, SVM
- Basis with HTML, CSS, C/C++ and PHP
- Beginner with Rust
- Contributor to open-source projects (scikit-learn, Cura, etc)
- Daily usage of git (github, gitlab)
- Daily usage of GNU/Linux (Archlinux and Debian-based distributions)

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## Selected Publications

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

11. **Dendrigraft of Poly-*L*-lysine as a Promising Candidate To Reverse Heparin-based Anticoagulants in Clinical Settings** B. Ourri, J.-P. Francoia, G. Monard, J.-C. Gris, J. Leclaire, and L. Vial, *ACS Med. Chem. Lett.*, 2019, DOI: 10.1021/acsmmedchemlett.9b00090
  - **Digitization of multistep organic synthesis in reactionware for on-demand pharmaceuticals** P. J. Kitson, G. Marie, J.-P. Francoia, S. S. Zaleskiy, R. C. Sigerson, J. S. Mathieson and L. Cronin, *Science*, 2018, **359**, 314 - [citation : 32](#)
  - **Digitizing Poly-*L*-Lysine Dendrigrafts: from Experimental Data to Molecular Dynamics Simulations** J.-P. Francoia, J.-C. Rossi, G. Monard and L. Vial, *J. Chem. Inf. Model.*, 2017, **57**, 2173 - [citations : 5](#)
  - **ChemBrows: An Open-Source Application Software To Keep Up to Date with the Current Literature** J.-P. Francoia and L. Vial, *J. Chem. Educ.*, 2016, **93**, 1137 - [open access, citation : 1](#)
  - **Monitoring Clinical Levels of Heparin in Human Blood Samples with an Indicator-Displacement Assay** J.-P. Francoia, R. Pascal, and L. Vial, *Chem. Commun.*, 2015, **51**, 1953 - [citations : 14](#)

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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 a 3D printer), microelectronics