

# Quentin Grimonprez

Data scientist

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## Experience

### Main

- Since 10/2020 **Head of Data Science**, *DiagRAMS Technologies*, Lille  
Head of Data Science
- 10/2019 **R&D Engineer**, *MODAL team, Inria Lille - Nord Europe*  
to 09/2020 Contribution to the technological development of the start-up DiagRAMS Technologies.
  - Predictive maintenance: remaining life analysis, anomaly detection, signal segmentation, functional data analysis
  - Development and maintenance of R packages: RMixtComp, cfda
- 10/2016 **Technology Transfer Engineer**, *Inria Lille - Nord Europe*  
to 09/2019
  - Realization of technology transfer contracts in statistics: clustering of heterogeneous data, detection of failures in signals, scoring...
  - Contribution to the MixtComp software (mixture models for clustering).
  - Realization of the SmartData demonstrator for the Inria showroom <http://modal-demo.lille.inria.fr:3838/smartDataApp/>.
  - Scientific popularization: Fête de la science 2017-2018 in high schools, internal communication, presentation of the SmartData demonstrator.
  - Trainee supervision
- 10/2013 **Phd in Statistics**, *MODAL team, Inria Lille - Nord Europe*  
to 09/2016 *Variable selection in high dimension in a correlated setting*. Creation of a method combining classification and variable selection using penalized regression as well as a hierarchical testing procedure. R package development. Application on biological data.
- 10/2012 **R&D Engineer**, *MODAL team, Inria Lille - Nord Europe*  
to 09/2013
  - Multi-patient analysis of genomic data.
  - Programming in R/C++ of a DNA chip data analysis package.
  - Penalized regression methods, signal segmentation.
  - Real data applications.

### Others

- 2020 **Enseignant Vacataire**, *Polytech'Lille*  
Statistic Project (15h).
- 2014–2016 **Teaching**, *Polytech'Lille*  
128h of statistics in *Génie Informatique et Statistique* (year 3 to 5 of the engineering cycle): probability, exploratory statistics (PCA, CA, CMA, hierarchical clustering, k-means...), supervised classification (LDA, QDA, logistic regression), advanced modelling (missing data management, PCR, PLS, ridge regression), time series.
- 2013–2014 **Doctorant assistant**, *Université Lille 1*  
Scientific popularization of research of the Inria MODAL team for high school students and Lille 1 staff (64h). Realization of the supports and presentation.

03/2012 **Intern, MODAL team, Inria Lille - Nord Europe**  
to 08/2012 Development in C++ of EM and SEM algorithms for the clustering of rank data (ordered list of objects). R interface: Rankcluster package.

## Education

2013–2016 **Phd in Statistics, Inria-DGA-Université Lille 1**  
*Variable selection in high dimension in a correlated setting.*

2011–2012 **Master's degree in statistical and numerical engineering, Université Lille 1**  
Data Analysis (PCA, CA, MCA, clustering, regression, anova), operational research, R, SAS, SPSS, PhP, MySQL.

2009–2011 **Master's degree in probability and statistics, Université Lille 1**  
Master's thesis *Morphological and statistical characterization of the population activity of a bee colony*. Markov random fields in image processing.

2006–2009 **Bachelor's degree in mathematics, Université catholique de Lille**

## Language

French Mother tongue  
English B2 TOEIC 865 (february 2012)

## Computer skills

R Packages: Rankcluster, HDPenReg, MPAgenomics, MLGL, RMixtComp, cfda. Graphical interface (shiny).

C++ Development of the internal part of the Rankcluster package in C++. Contributor to MixtComp: addition of a mathematical model.

Python Data analysis (pandas, scikitlearn, seaborn)

L<sup>A</sup>T<sub>E</sub>X Writing reports, letters, presentations, CVs. . .

OS Linux, Windows

Dev. tools Git, Jenkins, Travis, GitHub actions, Google Test (C++), testthat (R), unittest (Python).

## Publications & Talks

### Phd Thesis

- [1] Quentin Grimonprez. "Sélection de groupes de variables corrélées en grande dimension". PhD thesis. Université de Lille, 2016. URL: <https://www.theses.fr/2016LIL10165>.

### Articles

- [10] Quentin Grimonprez et al. "MLGL: An R Package Implementing Correlated Variable Selection by Hierarchical Clustering and Group-Lasso". In: *Journal of Statistical Software* 106.3 (2023), pp. 1–33. DOI: 10.18637/jss.v106.i03.
- [11] Quentin Grimonprez et al. "MPAgenomics : An R package for multi-patients analysis of genomic markers". In: *BMC Bioinformatics* 15 (Dec. 2014), p. 394. DOI: 10.1186/s12859-014-0394-y.

- [12] Julien Jacques, Quentin Grimonprez, and Christophe Biernacki. "Rankcluster: An R Package for Clustering Multivariate Partial Rankings". In: *The R Journal* 6.1 (2014), pp. 101–110. DOI: 10.32614/RJ-2014-010. URL: <https://doi.org/10.32614/RJ-2014-010>.
- [16] Cristian Preda, Quentin Grimonprez, and Vincent Vandewalle. "Categorical Functional Data Analysis. The cfda R Package". In: *Mathematics* 9.23 (2021). ISSN: 2227-7390. DOI: 10.3390/math9233074. URL: <https://www.mdpi.com/2227-7390/9/23/3074>.

### Conferences

- [2] Quentin Grimonprez, Alain Celisse, and Guillemette Marot. "Analyse multi-patients de données génomiques". In: *46ièmes journées de la Statistique de la SFdS*. Rennes, France, 2014. URL: [http://papersjds14.sfds.asso.fr/submission\\_120.pdf](http://papersjds14.sfds.asso.fr/submission_120.pdf).
- [4] Quentin Grimonprez, Alain Celisse, and Guillemette Marot. "Sélection de groupes de variables corrélées en classification par group-lasso et classification ascendante hiérarchique". In: *47ièmes journées de la Statistique de la SFdS*. Lille, France, 2015. URL: [http://papersjds15.sfds.asso.fr/submission\\_155.pdf](http://papersjds15.sfds.asso.fr/submission_155.pdf).
- [5] Quentin Grimonprez, Alain Celisse, and Guillemette Marot. "Sélection de groupes de variables corrélées en classification par group-lasso et classification ascendante hiérarchique". In: *6ièmes Rencontres des Jeunes Statisticien-ne-s*. Le Teich, France, 2015. URL: <http://rencontres-jeunes-statisticiens.sfds.asso.fr/wp-content/uploads/2016/09/Exposes.tar.gz>.
- [6] Quentin Grimonprez, Alain Celisse, and Guillemette Marot. "Sélection de groupes de variables corrélées en classification par group-lasso et classification ascendante hiérarchique". In: *48ièmes journées de la Statistique de la SFdS*. Montpellier, France, 2016. URL: [http://papersjds16.sfds.asso.fr/submission\\_113.pdf](http://papersjds16.sfds.asso.fr/submission_113.pdf).
- [8] Quentin Grimonprez, Julien Jacques, and Christophe Biernacki. "Rankclust : An R package for clustering multivariate partial rankings." In: *Deuxièmes rencontres R*. Lyon, France, 2013. URL: <https://r2013-lyon.sciencesconf.org/18426.html>.
- [9] Quentin Grimonprez et al. "Diagnostic automatisé d'aiguillage ferroviaire par apprentissage statistique". In: *Congrès Lambda Mu 22 " Les risques au cœur des transitions " (e-congrès) - 22e Congrès de Maîtrise des Risques et de Sûreté de Fonctionnement, Institut pour la Maîtrise des Risques*. Le Havre (e-congrès), France, Oct. 2020. URL: <https://hal.science/hal-03479596>.
- [13] Guillemette Marot et al. "Variable selection with Multi-Layer Group Lasso". In: *useR! 2022*. Virtual, United States, June 2022. URL: <https://hal.inria.fr/hal-03942579>.
- [14] Cristian Preda and Quentin Grimonprez. "Linear approximation for multivariate categorical functional data analysis". In: *24th Conference of Romanian Society of Probability and Statistics*. Bucharest, Romania, 2023. URL: <https://hal.science/hal-04393621>.
- [15] Cristian Preda, Quentin Grimonprez, and Vincent Vandewalle. "Categorical functional data analysis with the cfda r package". In: *52ièmes journées de la Statistique de la SFdS*. Nice, France, 2021. URL: [https://jds2021.sciencesconf.org/data/pages/book\\_jds2021\\_fr\\_compressed.pdf](https://jds2021.sciencesconf.org/data/pages/book_jds2021_fr_compressed.pdf).

- [17] Cristian Preda, Vincent Vandewalle, and Quentin Grimonprez. "cfda R package for categorical functional data". In: *14th International Conference of the ERCIM WG on Computational and Methodological Statistics*. London, UK, 2021. URL: <http://www.cmstatistics.org/RegistrationsV2/CMStatistics2021/viewSubmission.php?in=1531&token=69316pp901n61op27q22pq9r10ssn368>.

### Posters

- [3] Quentin Grimonprez, Alain Celisse, and Guillemette Marot. *Analysis of genomic markers: Make it easy with the R package MPAGenomics*. SMPGD 2014. Poster. Laboratoire de Génomique des Microorganismes, Jan. 2014. URL: <https://hal.science/hal-01091543>.
- [7] Quentin Grimonprez, Alain Celisse, and Guillemette Marot. *Variable selection by exploiting correlation*. XXVIIIth International Biometric Conference. Poster. July 2016. URL: <https://hal.science/hal-04031191>.

### Seminars

- *Sélection de groupes de variables corrélées en classification par group-lasso et classification ascendante hiérarchique*. Q. Grimonprez, A. Celisse, G. Marot. Séminaire de Statistique du laboratoire MAP5, Paris (2015).  
<http://map5.mi.parisdescartes.fr/seminairesMAP5/exposes/import1241/>
- *Sélection de groupes de variables corrélées en classification par group-lasso et classification ascendante hiérarchique*. Q. Grimonprez, A. Celisse, G. Marot. Séminaire du laboratoire eric, Lyon (2015).

### Hobbies

- Cinema
- Reading
- Cycling
- Football

### Useful links

ORCID <https://orcid.org/0000-0003-3492-2532>

HAL [https://hal.science/search/index/?q=quentin-grimonprez&rows=30&authIdPerson\\_i=1237634](https://hal.science/search/index/?q=quentin-grimonprez&rows=30&authIdPerson_i=1237634)

GitHub <https://github.com/modal-inria>

SmartData <http://modal-demo.lille.inria.fr:3838/smartDataApp/>