
Curriculum Vitae

Julie Josse

Nationality: French.

Date of birth: 10th November 1983.

Gender: female.

Position

Associate professor in the applied mathematics department of Agrocampus Ouest (a higher education and research public Institute of the French Ministry of Food, Agriculture and Fisheries) in Rennes (Britanny, France), since january 2011.

I am a member of the Research Institute in Mathematics of Rennes (IRMAR - UMR 6625 - CNRS).

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Education

- 2007–2010 **PhD thesis in Statistics defended the 22 October 2010.**
PhD awarding institution: Agrocampus Ouest Rennes.
Title: “ *Prise en compte des données manquantes en analyse exploratoire des données*”.
Advisors: Jérôme Pagès (Professor, Agrocampus Ouest) and François Husson (Professor, Agrocampus Ouest).
Committee: Michael Greenacre (Pr, Univ. Barcelona Spain, president), Henk Kiers (Pr, Univ. Groëningen the Netherlands, reviewer), Gérard Govaert (Pr, Univ. Compiègne France, reviewer), Pieter Kroonenberg (Pr, Univ. Leiden the Netherlands, invited), Annie Morin (Associate professor, IRISA, Rennes France, examiner).
Award: best doctoral PhD thesis by the French Statistical Society (Prix Marie-Jeanne Laurent-Duhamel).
- 2004–2006 **Master degree in Statistics *summa cum laude*** University Rennes II, France.

Work experience and training

- **January 2011 - Onwards.** Assistant professor in Statistics. Applied mathematics department Agrocampus Ouest, Rennes.
- **October 2006 - December 2010.** Engineer- Ingénieur d'études (computer manager, assistance to researchers, etc.). Applied mathematics department Agrocampus Rennes.
- **February 2006 - August 2006.** M.Sc. internship on the topic "prediction of ozone pollution in Brittany". Research department of Rennes II University. Work in collaboration with the association Air Breizh.
- **May - August 2005.** M.Sc. internship on the topic "watermarking of images". Public science and technology institution (Institut National de Recherche en Informatique et en Automatique INRIA), Rennes.
- **July - September 2004.** Assistant statistician. Acoustic unit for fisheries - Development research institute (Institut de Recherche pour le Développement IRD), Plouzané, Brest.

Publications

Books

- PA. Cornillon, A. Guyader, F. Husson, N. Jégou, J. Josse, M. Kloareg, E. Matzner-Løber, L. Rouvière. (2012). R for Statistics, Chapman & Hall. 320 pages. 300 books sold.
<http://www.crcpress.com/product/isbn/9781439881453>.
- PA. Cornillon, A. Guyader, F. Husson, N. Jégou, J. Josse, M. Kloareg, E. Matzner-Løber, L. Rouvière (2008, 2010, 2012). Statistiques avec R, Presses Universitaires de Rennes. 300 pages. More than 5000 books sold.
<http://www.pur-editions.fr/detail.php?idOuv=1836>

Chapter in books

- F. Husson & J. Josse (2013). Multiple Correspondence Analysis. Submitted for The Visualization and Verbalization of Data. Edited by Jorg Blasius and Michael Greenacre. To be published soon.

Articles

- Josse, J. & Timmerman, M.E. & Kiers, H.A.L. (2013). Missing values in multi-level simultaneous component analysis. *Chemometrics and Intelligent Laboratory Systems*.
- Josse, J., & Husson, F. (2013). Handling missing values in Multiple Factor Analysis. *Food Quality and Preferences*.
- Josse, J., & Husson, F. (2013). Handling missing values in multivariate exploratory data analysis. *Journal of the French Statistical Society (SFdS)*. **153 (2)**, 79-99. (Paper written for the best Ph.D doctoral thesis prize delivered by the French Statistical Society).

- Josse, J., Chavent, M., Liqueur, B. & Husson, F. (2012). Handling missing values with Regularized Iterative Multiple Correspondence Analysis. *Journal of Classification*. **29** (1), 91-116.
- Josse, J. & Husson, F. (2011). Selecting the number of components in PCA using cross-validation approximations. *Computational Statistics and Data Analysis*. **56** (6), 1869-1879.
- Josse, J., Pagès, J. & Husson, F. (2011). Multiple Imputation in PCA. *Advances in Data Analysis and Classification*. **5** (3), 231-246.
- Josse, J., Pagès, J. & Husson, F. (2009). Données manquantes en analyse en composantes principales. *Journal de la Société Française de Statistique (SFdS)*. **150** (2), 28-51.
- Josse, J., Pagès, J. & Husson, F. (2008). Testing the significance of the RV coefficient. *Computational Statistics and Data Analysis*. **53**, 82-91.
- Lê, S., Josse, J. & Husson, F. (2008). FactoMineR: an R package for multivariate analysis. *Journal of Statistical Software*. **25** (1), 1-18.

Submitted papers - technical reports

- Josse, J. & Holmes, S (2013). Measures of dependence between random vectors and tests of independence. A survey. *On Arxiv: <http://arxiv-web3.library.cornell.edu/abs/1307.7383>*
- Josse, J., van Eeuwijk, F., Piepho, H-P, Denis, J.B. (2013). Another look at Bayesian analysis of AMMI models for genotype-environment data. Submitted.
- Verbanck, M. & Josse, J. & Husson, F. (2013). Regularized PCA to denoise and visualise data. In revision.
- Audigier, V., Husson, F. & Josse, J. (2013). A principal components method to impute mixed data. In revision.
- Denis, J.B. & Josse, J. (2012). Inferring biadditive models within the Bayesian paradigm. Technical report.

Conferences, workshops, seminars

The name of the speaker is in bold. I presented my work in more than 30 national and international conferences and seminars.

Conferences

- **Josse, J.** (2013). **Invited: 1 hour.** Multiple imputation with Bayesian PCA. French annual Chemometrics meeting, Brest, France, September, 25 th.
- **Husson, F.** & Josse, J. (2013). L'analyse de données avec FactoMineR : les nouveautés. Deuxièmes Rencontres R, Lyon, France, June, 27 th.
- **Verbank, M.**, Josse, J. & Husson, F. (2013). Regularised PCA to denoise and visualize data. Journée de la Société Française De Statistique, Toulouse, France, May, 27-31th.
- **Audigier, V.**, Josse, J. & Husson, F. (2013). Multiple imputation with principal component methods. Journée de la Société Française De Statistique, Toulouse, France, May, 27-31th.
- **Josse, J.** (2013). **Invited: 1 hour.** Regularized PCA to denoise and visualise data. StatLearn 2013, Bordeaux, France, 8-9 April.
- Josse, J., Fujii, H., Husson, F., & **Ono, M.** (2012). A semi-automatic computational method to identify FOXP3+T cell subpopulations in melanoma patients. Journal of investigative dermatology.
- Verbank, M., Husson, F. & **Josse, J.** (2012). PCA visualization improved by regularization. Computing & Statistics (ERCIM 2012), Oviedo, Spain, 1-3 December.
- **Josse, J.** (2012). **Invited: 1 hour.** Prise en compte des données manquantes en analyse exploratoire des données. Meeting of the French Statistical Society (SFdS), Bruxelles, Belgique, 21-25 May, 8 pages in proceedings. Talk delivered when being awarded the Marie-Jeanne Laurent-Duhamel prize for my Ph.D. dissertation by the French Statistical Society.
- **Josse, J.**, Timmerman, M. & Kiers, H. (2012). **Invited in session.** Missing values in multi-level simultaneous component analysis. Computational Statistics (COMPSTAT), Cyprus, August 27th - September 1st.
- Audigier, V., **Husson, F.** & Josse, J. (2012). Missing values imputation for mixed data based on principal components methods. Computational Statistics (COMPSTAT), Cyprus, August 27th - September 1st.
- **Audigier, V.**, Husson, F. & Josse, J. (2012). Imputation de données manquantes pour des données mixtes via les méthodes factorielles grâce à missMDA. First R meeting, Bordeaux, France, 2-3 July.
- **Josse, J.**, Chavent, M., Liquet, B. & Husson, F. (2011). **Invited in session.** Multiple correspondence analysis with missing values: a comparative study. Joint Conference of the German Classification Society (GfKl), with the International Federation of Classification Societies (IFCS), Frankfurt, Germany, August 30th - September 1st.
- **Josse, J.** & Husson, F. (2011). missMDA: a package to handle missing values in and with multivariate exploratory data analysis methods. useR! 2011 (The R user Conference), Warwick, England, August 15-20th.
- **Josse, J.**, Chavent, M., Liquet, B. & Husson, F. (2011). **Invited in session.** Dealing with missing values in multiple correspondence analysis. International Classification Conference, St Andrew, Scotland, July 11-15th.
- Josse, J., Chavent, M., Liquet, B. & **Husson, F.** (2011). Handling missing values with regularized iterative multiple correspondence analysis. Conference Correspondence Analysis and Related MEthods (CARME), Rennes, February 8-11th.

- **Josse, J.**, Husson, F. & Pagès, J. (2010). Variabilité des dimensions en ACP. Meeting of the French Statistical Society (SFdS), Marseille, France, May 24-28th, 8 pages in proceedings.
- **Husson, F.**, Josse, J., & Pagès, J. (2010). Analyse de données avec R. Complémentarité des méthodes d'analyse factorielle et de classifications. Meeting of the French Statistical Society (SFdS), Marseille, France, May 24-28th, 8 pages in proceedings.
- **Josse, J.**, Husson, F. & Pagès, J. (2009). Apport de l'ACP probabiliste pour la gestion des données manquantes en ACP. Meeting of the French Statistical Society (SFdS), Bordeaux, France, May 25-29th, 8 pages in proceedings.
- **Josse, J.**, Husson, F. & Pagès, J. (2008). Testing the significance of the RV coefficient, Application to napping data. 10èmes journées Européennes Agro-industrie et méthodes statistiques (AGROSTAT), Louvain-la-Neuve, Belgique, January 23-25th, 6 pages in proceedings.
- **Josse, J.**, Husson, F. & Pagès, J. (2008). Missing values in multiple multivariate analysis. Annual conference of the French Statistical Society (SFdS) and the Statistical Society of Canada (SSC), Ottawa, Canada, May 25-29th.
- **Husson, F.**, Josse, J. & Lê, S. (2008). FactoMineR, an R package for exploratory data analysis for teaching and research. Annual conference of French Statistical Society (SFdS) and the Statistical Society of Canada (SSC), Ottawa, Canada, May 25-29th.
- Josse, J., Husson, F. & **Pagès, J.** (2007). Testing the significance of the RV coefficient. IASC conference on statistics for data mining, learning and knowledge extraction, Aveiro, Portugal, August 30th - September 1st, 8 pages in proceedings.
- Josse, J. Lê, S. & **Husson, F.** (2007). Multivariate Analysis with the FactoMineR package. user! 2007 (The R user Conference), Iowa State University, Ames, Iowa, August 8-10th.
- **Josse, J.** & Matzner-Lober, E. (2007). Prévisions des pics d'ozone à Lorient. Meeting of the French Statistical Society (SFdS), Angers, June 11-15th, 8 pages in proceedings.
- Morand, E., **Josse, J.** & Pagès, J. (2007). Missing values in multiple multivariate dataset. XXII Applied Stochastic Models and Data Analysis (ASMDA) conference, Chania, Crete, Greece, May 29th - June 1st, 8 pages in proceedings.
- **Furon, T.**, Josse, J. & Le Squin, S. (2006). Some theoretical aspects of watermarking detection. Security, Steganography, and Watermarking of Multimedia Contents VIII, San Jose, CA, USA, January, 12 pages in proceedings.
- **Coll, C.**, Josse, J., Benoit, D., Lebourges-Dhaussy, A., Josse, E., de Morais, L.T., Simier M., & Laë R. (2005). How to recognize the fish in the trees? Methodological reflections for the fish population assessment in an artificial reservoir. ICES Working Group on Fisheries Acoustics Science and Technology (WGFAST), Rome, Italy, April 19-22th.

Seminars, Workshops

- Statistics seminar, Stanford University, Palo Alto, California, 23 July 2013. Missing values in PCA: from single to multiple imputation.
- Susan Holmes group's meeting, Stanford University, Palo Alto, California, 5 June 2013. Measures of dependence between random vectors and tests of independence - Literature review.

- Workshop in Biostatistics, Stanford University, Palo Alto, California, 23 May 2013. Handling missing values in exploratory multivariate data analysis: from PCA to multi-blocks methods.
- Statistics seminar, CNAM, Paris, France, 16 January 2013. Visualisation de données par ACP régularisée.
- Workshop on ThRee-way methods In Chemistry And Psychology (and other areas) TRI-CAP, Bruges, Belgium, June 2-7th 2012. Handling missing values in multi-level simultaneous component analysis.
- Workshop on Statistical interpretation of Genotype-Environment data (plant breeding), INRA (French National Institute for Agricultural Research), Jouy en Josas, France, 4th April 2012. Inferring biadditive models within the Bayesian paradigm (speaker: J-B. Denis).
- Seminar for researchers of Agrocampus and INRA specialized in milk production and crop science, Agrocampus Rennes, France, 3rd October 2011. Prise en compte des données manquantes.
- Seminar for the psychometric's team of Leiden University, The Netherlands, 20 June 2011. Missing values in exploratory data analysis.
- Statistics seminar, IUT de Caen Département STID, Caen, France, 22 March 2011. Prise en compte des données manquantes en ACP : imputation simple et multiple.
- Statistics seminar, équipe Mathématiques et Informatique Appliquées (MIA), INRA, Jouy-en-Josas, France, 8 March 2011. Prise en compte des données manquantes en ACP : imputation simple et multiple.
- Seminar in statistics and computing for social sciences, Université Paris 1, Paris, France, 25 February 2011. Présentation de FactoMineR.
- Statistics seminar, institut de mathématiques de Bordeaux (IMB), Bordeaux, France, 8 March 2010 (speaker F. Husson). Données manquantes en ACP, de l'imputation simple à l'imputation multiple.
- Statistics seminar, institut de recherche mathématique avancée (IRMA), Strasbourg, France, 7 October 2008. Données manquantes en AFM.
- Statistics seminar, Institut Elie Cartan, Nancy, France, 13rd June 2008. Données manquantes en AFM.
- Seminar for the national institute for demographic studies (INED), Paris, France, 5th June 2008. FactoMineR, une librairie de fonctions R en analyse des données pour l'enseignement et la recherche.
- Workshop "exploratory multivariate data analysis methods", Agrocampus, Rennes, France, 23 May 2007. Données manquantes en tableaux multiples.

Tutorial in conferences

- **Josse, J., & Husson, F.** (2011). Presentation of exploratory analysis methods (3h). Meeting of the doctoral and post-doctoral students of the Pierre Louis Public Health institute, epidemiology and science of biological information. Journées de l'Ecole Doctorale Pierre Louis de Santé Publique : Epidémiologie et Sciences de l'Information Biomédicale. St Malo, 20 October.
- **Josse, J.** (2011). Multi-table methods using the software R (3h). Workshop of the French Statistical Society. Ateliers de la SFdS. Paris, 1st April.
- **Josse, J. & Husson, F.** (2010). Exploratory data analysis with a special focus on clustering and multiway methods (3h). useR!2010 (The R user Conference), Gaithersburg, Maryland, USA, July 20-23 th.
- **Josse, J., Husson, F. & Lê, S.** (2008). Exploratory data analysis (3h). useR!2008 (The R user Conference), Dortmund, Germany, August, 11-14th.
- **Lê, S., Husson, F. & Josse, J.** (2008). Multiway data analysis (3h). useR!2008 (The R user Conference), Dortmund, Germany, August, 11-14th.

Abroad experiments

- Invited researcher (April 2013 - July 2013) at Stanford University (Palo Alto, California) in the Statistic department. Starting collaboration with Will Fithian, Trevor Hastie and Stefan Wager.
- Invited researcher (April 2011 - June 2011) at Leiden University (The Netherland) in Pieter Kroonenberg's laboratory (department of education and child Studies). Worked with Henk A.L. Kiers and Marieke Timmerman from Groningen University (Heymans Institute of Psychology).

Awards and Fellowships

- Ph.D. dissertation award (Marie-Jeanne Laurent-Duhamel - French Statistical Society), 2012: its aim is to reward the quality of a young, french-speaking statistician's doctoral thesis. In 2012, it distinguishes a notable contribution to applied statistical research.
<http://www.sfds.asso.fr/>
- AgreenSkills grant's for mobility research (2013). AgreenSkills is an international program co-funded by the European Commission coordinated by INRA in cooperation with Agreenium. It is designed to increase the research potential of promising researchers to better respond to the challenges in the fields of agriculture, food, nutrition, environment related to the scientific objectives of the Agreenium members and the European Commission.
<http://www.agreenskills.eu/agreenskills-cms/Outputs/List-of-awarded-fellows>.

Softwares

Investment in theoretical research is justified by potential benefits in areas of application. Software development is crucial to spread methods. I am involved in the development of two packages of the free statistical R (<http://cran.r-project.org/>) software:

- FactoMineR (<http://factominer.free.fr>) dedicated to principal component methods (PCA, Correspondence Analysis, Multiple Correspondence Analysis, Multiple Factor Analysis, ...). Users are from the public sector, private sector and research institution and from 157 countries.
- missMDA dedicated to handle missing values in principal component methods and to impute continuous, categorical and mixed data.

Scientific responsibilities

Conferences organization

- Member of the organizing committee of the international Sensometrics meeting, Agrocampus, Rennes, July 2012 (150 participants).
<http://sensometrics2012.agrocampus-ouest.fr/infoglueDeliverLive>
- Member of the organizing committee of the french meeting on surveys, Ecole Nationale de la Statistique et de l'Analyse de l'Information ENSAI, Rennes, November 2012 (150 participants).
<http://sondages2012.ensai.fr/>
- President of the organizing committee of the international CARME (Correspondence Analysis and Related Methods), Agrocampus, Rennes, February 2011 (150 participants).
<http://carme2011.agrocampus-ouest.fr/>
- Vice-president of the organizing committee of the international useR!2009 conference, Agrocampus, Rennes, July 2009 (480 participants).
<http://www.r-project.org/conferences/useR-2009/>

Conferences scientific committee

- Member of the scientific committee of the international SensoMetrics conference, Chicago, United States, July 2014.
- Member of the scientific committee for the second "Rencontres R", Lyon, June 2013.
- Organization of a session on missing values in COMPSTAT 2014 (Geneve, Switzerland)

Editorial - reviewing activities

- Associate editor of Journal of Statistical Software, Impact Factor 2012: 4.
<http://www.jstatsoft.org/>

- Referee for: Journal of Classification, BMC Bioinformatics, Journal of Statistical Software, Theoretical and Applied Genetics, Environmetrics, Statistical Analysis and Data Mining, Computational Statistic and Data Analysis, Modulad.
- Reviewer for research projects of the FWO (a funding agency that supports fundamental research in Belgium).
<http://www.fwo.be/Default.aspx>

Other responsibilities

- Co-responsible of the statistics seminar of the Rennes statistical team (IRMAR, UMR CNRS 6625).
<http://perso.univ-rennes1.fr/lionel.truquet/seminaire/seminaire.html>

Teaching

My teaching activities (192 hours per year) are diverse from the point of view of the teachings (general statistics, bio-statistics, software, etc.), the level of the students (bachelor - master degrees) and the training involved (master in statistics, agronomy, geography, etc.).

Bachelor degree in life and environmental sciences, Agrocampus Ouest, Rennes. Statistics: descriptive statistics, analysis of variance, linear regression, PCA, experimental design (labs - lecture J. Pages), (100h/year), 2006 - 2013.

Bachelor degree in biology, Pierre and Marie Currie University Paris - Agrocampus Ouest, Roscoff. Bio-statistics: tests, linear models (lecture), (30h), 2012.

Master degree in applied statistics, University Rennes 2. Principal component methods: PCA, correspondance analysis, multiple correspondence analysis (labs - lecture J. Benasseni), (12h/year), 2006 - 2013.

Master degree in applied statistics, Agrocampus Ouest, Rennes.

- Statistics with the R software (lecture), (24h), 2012.
- Missing values in principal components methods (lecture), (3h), 2012.

Master degree in geography, University Rennes 2. Basic statistics (labs - lecture N. Jegou), (18h), 2010.

Master degree in fisheries, Agrocampus. Introduction to additive models (lecture), (3h), 2013.

School of Public Health (EHESP). Biostatistics (labs - lecture M. Berra), (18h), 2010.

Master degree in food science, AgroParisTech, Massy, Paris. Presentation of the multiple factor analysis method with applications to sensory data (lecture), (3h), 2011.

Master degree in statistics, National Economics and Statistics Schools (ENSAI). Introduction to the problematic of missing values (labs), (12h), 2012.

Responsabilités administratives :

- Membre élu au Conseil des Enseignants.
- Responsable des enseignements de statistiques de premières années à l'école d'Agronomie

Students

- Supervision of M.Sc. internships. Vincent Audigier on the subject: *missing values for mixed data*, March-August 2012. He will start a Ph.D thesis in september 2013.
- Supervision of M.Sc. internships of student working in companies. 3-4 students/year of the master degree in applied statistics of Agrocampus Ouest Rennes. In 2013, my students are at DANONE Research; Yves Rocher and IFREMER, a French research institute for exploration of the sea. In 2012, students were at Yves Rocher, a cosmetic industry; ISVV, a science institute of vine and wine; ANSES, French agency of food environmental and occupational health and safety and ARVALIS, a technical institute of applied research on agriculture (arable crop).

Consultancy for the public or private sector

- Independent consultant for L'OREAL Paris. 2013. First meeting September 2013.
- Statistics with the R software, (4 times 8h), 2010-2013. Inter - Companies Consulting, INRA, researcher and students from Agrocampus Ouest, Rennes.
- Analysis of consumers data, (3h), 2012. CTIFL (interprofessional center for fruits and vegetables).
- Analysis of variance and analysis of sensory data, (12h), 2012. SICAVAC (interprofessional agronomic consulting in viticulture and oenology).
- Presentation of the software SensoMineR, (4h), 2011. Ph.D students of a public science and technology institution (INRIA), Rennes.