

Aurore Archimbaud, Ph.D

Assistant Professor

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Research interest

Multivariate data analysis, outlier detection, dimension reduction, robust statistics, functional data analysis, rating-scale data, matrix completion, unsupervised methods, data visualization.

Education

- Feb. 2019 - Dec. 2023 **Qualification for French assistant professor positions in Section 26 - Applied mathematics and applications of mathematics**, Toulouse, France
- Feb. 2015 - Jan. 2018 **Doctorate in Statistics**, *Company: ippon innovation, Research Department: University of Toulouse 1 - Capitole (TSE-R)*, Toulouse, France
 - Title: *Statistical methods for outlier detection for high-dimensional data*
 - Thesis supervisors: Anne Ruiz-Gazen and Klaus Nordhausen
- 2012-2014 **Master's degree in Statistics and Econometrics**, *Toulouse School of Economics (TSE), Toulouse 1 - Capitole University*, Rank: 3/28, Toulouse, France
- 2011-2014 **Magisterium Economist Statistician**, *Toulouse 3 - Paul Sabatier University*, Rank: 1/16, Toulouse, France
- 2009-2012 **Bachelor's degree in Economics**, *Toulouse School of Economics (TSE), Toulouse 1 - Capitole University*, Rank: 6/110, **Economics & Management** (2nd year, Rank S3: 6/374, Rank S4: 2/336), **Economics & Mathematics** (1st year), Toulouse, France
- 2008-2009 **Preparatory classes**, *Fermat High School*, One year undergraduate intensive course in Mathematics and Physics, Obtained with 1st class Honors, Toulouse, France

Experience

- Jan. 2024 - ... **Assistant Professor, TBS Toulouse Business School**, Toulouse, France
Departement of Information, Operations and Management Sciences
- Jan. 2022 - Dec. 2024 **Researcher, Erasmus University Rotterdam**, *Erasmus School of Economics*, Rotterdam, Netherlands
2/3 research in Statistics and 1/3 teaching activities.
- Jan. 2019 - Dec. 2021 **Data Scientist/ R&D Statistician, ippon innovation**, Toulouse, France
Various consulting activities
 - Project manager (agile methodology) and developer of several R Shiny (or JSL) applications for analyzing industrial data.
 - Technical leader in consulting data analysis projects.
 - R&D on European projects.
 - Collaborating with experts from the academic world. Co-supervisor of part of the work of a PhD student at Airbus (France). Supervision of several interns.
- Jul. 2018 - Dec. 2018 **Data Scientist, IVADO Labs**, Montréal, Canada
 - Designing and implementing applied AI/data science models that solve real-world problems.
 - Collaborating with experts from the academic world.
- Feb. 2015 - Jan. 2018 **Research Engineer in Statistics - PhD Student, ippon innovation**, Toulouse, France
Full time
Applied R&D on multivariate unsupervised outlier detection in a context of high-dimensional/low sample size data for industrial data in an European project:
 - Developing an innovative algorithm which ensures an increase in results of more than 50%: already on the market.
 - Reviewing the literature, implementing R packages, evaluating the results, developing theory and communicating on international and national conferences and through proceedings, papers and deliverables for experts of the field and non-statistician people.
 - Collaborating with international academicians and industrial companies.Applied projects:
 - Statistical analysis (outlier detection, clustering, drift analysis), data cleaning (missing values), data management and automation of reports.
 - For industrial data, bio-statistical data (for Evotec) and cybersecurity data (web log).
 - Implementation with the R & JMP softwares.
 - Management of two graduated students during internships.

- 2014-2015 **Statistician, *ippon innovation***, Toulouse, France
Part time
- Statistical analysis (distribution identification, variance analysis), data management and automation of reports.
 - For industrial data and bio-statistical data (for Pierre Fabre).
 - Implementation with the R software and deliverables for non-statistician people.
- 2014 **Statistician in R&D, “Origin & Destination Forecast”, *Airbus, Market Research & Forecast***, Toulouse, France
Internship
- Reducing long term prediction errors in forecasting air traffic.
 - Working on a paper under revision: P. Margaretic, C. Thomas-Agnan, and R. Doucet. Spatial dependence in (origin-destination) air passenger flows. *Papers in Regional Science*, 2015.
- 2013-2014 **Datamining Consultant, *GALEC***, Toulouse, France
Consulting Project
- Market Basket analysis to increase averaged basket and products classification to optimize the offers (for Drives).
 - Implementation of the methods with the SAS software.
- 2013 **Statistician in R&D, “Statistical optimization of test sequences”, *ippon innovation***, Toulouse, France
Internship
- R&D based on several methods: Projection Pursuit, PCA, Discriminant Analysis and Pseudo-Bagging.
 - Implementation of the final algorithm, which improved the previous results, with the R software.
- 2012 **Statistical Analyst, *Ministry of Agriculture, Agri-Food and Forestry***, Auzeville-Tolosane, France
Internship
- Analysis of the 2011 survey: report with descriptive statistics and identification of groups of agricultural practices.
 - Statistical analysis with the SPSS & MapInfo softwares: tests, linear regression, factor analysis and decision trees.

Teaching and pedagogical activities

Academic teaching - Teacher

- 2023 **Advanced R Programming for Business - Graduate level, *English***
 ○ MSc Artificial Intelligence & Business Analytics, Toulouse Business School - TBS, France, 2023/2024.
- 2023 **Business analytics - Undergraduate and Graduate levels, *English/French***
 ○ Master 1 - Programme Grande Ecole, **Business analytics**, Toulouse Business School - TBS, France, 2023/2024.
 ○ BSc in Management - Bachelor 1, **Business analytics & Data Visualization**, Toulouse Business School - TBS, France, 2023/2024.
 ○ Licence 3 - Programme Grande Ecole, **Introduction to Business Analytics**, Toulouse Business School - TBS, France, 2023/2024.
- 2021-2023 **Data Mining - Graduate level, *English/French***
 ○ Master Statistics and Econometrics, Toulouse School of Economics - TSE, France, 2021/2022 & 2022/2023.
- 2020-2022, 2024 **Data Visualization - Undergraduate and Graduate levels, *English/French***
 ○ PREV & OPS, Ecole Nationale de l'Aviation Civile - ENAC, France, 2020/2021 & 2021/2022.
 ○ Master Empirical Economics and Econometrics, Toulouse School of Economics - TSE, France, 2021/2022.
 ○ BSc in Management - Filière Distribution et Commerce - Bachelor 3, Toulouse Business School - TBS, France, 2023/2024.
- 2017-2021 **Outlier Detection - Graduate level, *English***
 ○ Master Statistics and Econometrics, Toulouse School of Economics - TSE, France, 2017/2018, 2019/2020 & 2020/2021.

Academic teaching - Teaching assistant

- 2014-2016 **Statistical Inference - Undergraduate level, *French***
 ○ Bachelor Economics & Management, Toulouse School of Economics - TSE, France, 2014/2015, 2015/2016.

Academic teaching - Students supervision

- 2023-... **Doctoral committee**
 ○ Katarína Firdová, 2023, University of Savoie Mont-Blanc, France. Directors: L. Vuillon and C. Labart. *Détection d'anomalies pour les séries temporelles par machine learning*. Jury member.
- 2023-... **Doctoral students**
 ○ Colombe Becquart, 2023 - ..., University of Toulouse, France. Co-director: A. Ruiz-Gazen. *Extension of the Invariant Coordinate Selection to cluster identification and rating scale data*.

- 2021-2024 **Master thesis - Graduate level, English - French**
- MS Technology Innovation Management, Toulouse Business School - TBS, France, 2023/2024, 2 students (supervisor).
 - MSc Artificial Intelligence & Business Analytics, Toulouse Business School - TBS, France, 2023/2024, 4 students (supervisor).
 - Master Econometrics and Management Science – Business Analytics and Quantitative Marketing (BA&QM), Erasmus School of Economics - ESE, The Netherlands, 2021/2022 & 2022/2023, 5 students (supervisor), 7 students (co-reader).
 - Master Economics and Business – Data Science and Marketing Analytics (DS&MA), Erasmus School of Economics, Erasmus School of Economics - ESE, The Netherlands, 2021/2022 & 2022/2023, 8 students (supervisor), 4 students (co-reader).
- 2021-2023 **Case studies - Graduate level, English/French**
- Master Statistics and Econometrics, Toulouse School of Economics - TSE, France, 2022/2023 (1 group of 3 students).
 - Master Econometrics and Management Science – Business Analytics and Quantitative Marketing, Erasmus School of Economics - ESE, The Netherlands, 2021/2022 & 2022/2023 (English), 6 groups of 4 students (supervisor), 8 groups of 4 students (co-reader).
- 2021-2022 **Bachelor thesis, English**
- Bachelor Econometrics and Management Science, Erasmus School of Economics - ESE, The Netherlands, 2021/2022 & 2022/2023 – (English), 9 students (supervisor), 10 students (co-reader).
- Trainer for private sector**
- For ippon innovation, in French or in English, for groups of 6-12 people (mostly engineers), online or in-person, 1-4 days for semiconductors, pharmaceutical or biotechnological companies.
- 2019-2021 **R & R Shiny, French**
- 6 sessions: XFAB.
- 2020-2021 **Outlier Detection, French**
- 4 sessions: Pasteur, NXP, Data Value, Soitec.
 - SFdS: French Statistical Society, invited trainer - statistical workshop.
- 2021 **Fundamentals of JMP & Statistics, English, French**
- Inferential statistics, hypothesis testing, regression and analysis of variance, outlier detection, data science.
- 7 sessions: Alvotech, Saint Gobain, STMicroelectronics, Patheon - Thermo Fisher Scientific.

Publications

Under revision or submitted

- Alves, A., Archimbaud, A., Bergeret, F. and Soual, C. (2023) *Unsupervised statistical method for multivariate identification of atypical sensors*. US Patent App. 17/784, 190.
- A., Archimbaud, A., Ruiz-Gazen, A. and Soual, C. (2020) *Procédé de détermination du niveau d'atypicité d'individus, permettant notamment de détecter statistiquement des individus atypiques dans un cadre multivarié*. French Patent.
- A., Archimbaud, A., Ruiz-Gazen, A. and Soual, C. (2023) *Method for determining the level of unusalness of individuals, in particular in order to statistically detect unusual individuals in a multivariate context*. US Patent App. 17/784, 615.

International peer-reviewed journals

- Alfons, A., Archimbaud, A., Nordhausen, K. and Ruiz-Gazen, A. (2024) *Tandem clustering with invariant coordinate selection*. *Econometrics and Statistics*. In Press.
- Archimbaud, A., Drmac, Z., Nordhausen, K., Radojicic, U. & Ruiz-Gazen, A. (2023) *Numerical Considerations and a New Implementation for Invariant Coordinate Selection*. *SIAM Journal on Mathematics of Data Science (SIMODS)*, Vol.5(1):97–121.
- Archimbaud, A., Boulfani, F., Gendre, X., Nordhausen, K., Ruiz-Gazen, A., & Virta, J. (2022). *ICS for multivariate functional anomaly detection with applications to predictive maintenance and quality control*. *Econometrics and Statistics*. In Press.
- Archimbaud A., Bergeret F., D'Alberto S., Bonnin C., Soual C. (2019) *A new method for small sample space components screening: Challenges, algorithms and a case-study with Microchip*. *Microelectronics Reliability Volumes* 100–101.
- Archimbaud, A., Nordhausen, K., and Ruiz-Gazen, A. (2018). *ICS for multivariate outlier detection with application to quality control*. *Computational Statistics and Data Analysis* Vol.128:184–199.
- Archimbaud, A., Nordhausen, K., and Ruiz-Gazen, A. (2018). *ICSOutlier: Unsupervised Outlier Detection for Low-Dimensional Contamination Structure*. *The RJournal*, Vol. 10(1):234–250.

French peer-reviewed journals

- Archimbaud, A. (2018). *Détection non-supervisée d'observations atypiques en contrôle de qualité : un survol*. Journal de la Société Française de Statistique, Vol. 159(3):1–39.

Conference proceedings

- Alessandrino, S., Archimbaud, A., Bergeret, F. and Bevilacqua, S. (2021). *From space to automotive: early detection of burnin rejects on SiC products using a new statistical screening approach*. The 1st edition of the Automotive Reliability and Test workshop in Europe (ARTE), Virtual event
- Archimbaud, A., Soual, C., Bergeret, F., D'Alberto, S., Thebault, T., and Bonin, C. (2017). *High dimensional outlier screening of small dice samples for aerospace IC reliability*. The 10th international conference on mathematical methods in reliability, Grenoble, France
- Archimbaud, A., Nordhausen, K., and Ruiz-Gazen, A. (2017). *Distance de Mahalanobis et ICS pour la détection d'observations atypiques*. 49èmes Journées de Statistique, Avignon, France

R Packages

- Archimbaud, A., Alfons, A., Nordhausen, K. and Ruiz-Gazen, A. (2023). *ICSClust: Tandem Clustering with Invariant Coordinate Selection*. R package version 0.1.0.
- Alfons, A., Archimbaud, A., and Drenth, V. (2023). *robmedExtra: Extra functionality for (robust) mediation analysis*. R package version 0.1.0.
- Nordhausen, K., Alfons, A., Archimbaud, A., Oja, H., Ruiz-Gazen, A. and Tyler, D. E. (2023). *ICS: Tools for Exploring Multivariate Data via ICS/ICA*. package version 1.4-0.
- Archimbaud, A., May, J., Nordhausen, K., and Ruiz-Gazen, A. (2017). *ICSShiny: Invariant Coordinate Selection With a Shiny App*. R package version 0.5
- Archimbaud, A., Nordhausen, K., and Ruiz-Gazen, A. (2016). *ICSOutlier: Outlier Detection Using Invariant Coordinate Selection*. R package version 0.3-0

Thesis

- Archimbaud Aurore (2018). *Statistical methods for outlier detection for high-dimensional data*. Toulouse 1 - Capitole University, France

Patents

- Alves, A., Archimbaud, A., Bergeret, F. and Soual, C. (2023) *Procédé statistique non supervisé de détection multivariée de courbes atypiques*. French Patent FR3112407.

Refereeing activity

- 2024, 2021 Journal of Statistical Software (JSS).
- 2022 Statistical Papers (STPA).
- 2021 Journal of multivariate analysis (JMVA).
- 2015 Computational Statistics and Data Analysis (CSDA) in collab with Anne Ruiz-Gazen.

Affiliations

- 2020-2022 Member of the board of the Toulouse DataViz (TDV) association.
- 2017-2020 Member (elected) of the young statisticians of the French Statistical Society (SFdS), in charge of international relationships for the SFdS (2018) and creation of the Young Statisticians Europe (YSE) group.
- 2016 Member of the extended bureau of the young statisticians of the French Statistical Society (SFdS).

Conferences and forums committees

Member of scientific committees

- 2022-2023 Icors 2023, International Conference on Robust Statistics, Toulouse, France.

Session and contests organizer

- 23 May 2023 Icors 2023, International Conference on Robust Statistics, Toulouse, France. **Organizer and chair**. *Functional outlier detection with industrial applications*.
- 19 December 2022 CFE-CMStatistics 2022, King's College London, UK. **Organizer and chair**. *Multivariate methods: Joint diagonalization and projection pursuit*.
- 2020-2021 Hackaviz, data visualization competition with the Toulouse DataViz association (TDV), organization and president of the jury (2020), Toulouse, France.

- 2019 UseR!2019, Datathon, international competition, organization and member of the jury, Toulouse, France.
- [Member of organizing committees](#)
- 2022-2023 Icorns 2023, International Conference on Robust Statistics, Toulouse, France. **Vice-chair.**
- 2021 The 1st Dataviz meetings, La M el ee Num erique 2021, Toulouse, France.
- 2017-2019 UseR!2019, international conference, Toulouse, France.
- 2019 The 1st summer school in Statistics and Data Science for young researchers from French-speaking Africa, Young Group of the the French Statistical Society, M'bour, S en egal.
- 2018 Initiation of the 1st workshop for young European researchers in Statistics, Young Group of the French Statistical Society, Paris, France.
- 2017 The 6th Math Jobs Forum (FEM), Member of "Cellule AMPHI", Paris, France.
- 2016 The 5th R Meetings, Toulouse, France.

Communications

Invited communications and seminars

- 29 February 2024 **Invariant Coordinate Selection for Identifying the Structure of Multivariate Datasets**, *Alfons, A., Archimbaud, A., Nordhausen, K. and Ruiz-Gazen, A.*, Psychoco 2024, International Workshop on Psychometric Computing, Pre-Workshop Tutorial: Robust Statistical and Psychometric Methods in R, Erasmus University Rotterdam, The Netherlands.
- 6 July 2023 **Quantifying effects of rating-scale response bias: robustness properties of correlation measures**, *Alfons, A., Archimbaud, A., and Welz, M.*, DSSV-ECDA 2023, Joint conference of Data Science, Statistics & Visualisation and the European Conference on Data Analysis, Antwerp, Belgium.
- 15 September 2022 **Improving clustering through dimension reduction using Invariant Coordinate Selection**, *Alfons, A., Archimbaud, A., Nordhausen, K. and Ruiz-Gazen, A.*, ECDA 2022 - European Conference Data Analysis, Naples, Italy.
- 7 April 2022 **Scientific chair of Cifre meetings, Statistical methods for outlier detection**, *Archimbaud A. and Ruiz-Gazen A.*, ANRT, French National Technology Research Association, Paris, France.
- 19 December 2021 **New algorithms for implementing invariant component selection**, *Archimbaud A., Drmac Z., Nordhausen K., Radojicic U. and Ruiz-Gazen A.*, CFE-CMStatistics 2021, King's College London, UK.
- 13 July 2021 **Multivariate functional outlier detection using Invariant Component Selection**, *Archimbaud A., Boulfani F., Gendre X., Nordhausen K., Ruiz-Gazen A. and Virta J.*, the 63rd ISI World Statistics Congress, Virtual conference
- 24 September 2019 **Multivariate outlier detection with Mahalanobis distance and ICS (Invariant Coordinate Selection) for standard and high-dimensional data**, *Archimbaud A., Nordhausen K. and Ruiz-Gazen A.*, Seminar, Institut de Math ematiques de Toulouse (IMT), Toulouse
- 28 August 2015 **Comparison of statistical methods for multivariate outlier detection**, *Archimbaud A., Nordhausen K. and Ruiz-Gazen A.*, Seminar, University of Turku, Finlande

Invited roundtables

- 10 June 2021 **Statistical research in the private sector: possibilities and limits in business**, *Archimbaud A. and Nicolas Bousquet*, The 52th Statistical French days, Virtual event, France

International communications

- 24 June 2023 **A graphical user interface and reporting tools for robust mediation analysis: The R package robmedExtra**, *Alfons, A. and Archimbaud, A.*, Society for the Improvement of Psychological Science 2023 Meeting, School of Psychology of the University of Padova, Italy.
- 9 June 2023 **Quantifying effects of rating-scale response bias in correlational analyses**, *Alfons, A., Archimbaud, A., and Welz, M.*, Psychoco 2023, International Workshop on Psychometric Computing, Universit at Z urich, Switzerland.
- 19 December 2022 **Invariant coordinate selection as preprocessing for clustering**, *Alfons, A., Archimbaud, A., Nordhausen, K. and Ruiz-Gazen, A.*, CFE-CMStatistics 2022, King's College London, UK.
- 16 December 2017 **ICS with positive semi-definite scatter matrices for data not in general position**, *Archimbaud A., Nordhausen K. and Ruiz-Gazen A.*, CFE-CMStatistics 2017, University of London, UK
- 6 July 2017 **High dimensional outlier screening of small dice samples for aerospace IC reliability**, *Archimbaud A., Soual C., Bergeret F., D'Alberto S., Thebault T. and Bonin C.*, The 10th international conference on mathematical methods in reliability, Grenoble, France

- 25 August 2016 **Components selection for multivariate outlier detection with ICS**, *Archimbaud A., Nordhausen K. and Ruiz-Gazen A.*, COMPSTAT 2016, Oviedo, Spain
- 12 December 2015 **Comparison of statistical methods for multivariate outlier detection with R packages**, *Archimbaud A., Nordhausen K. and Ruiz-Gazen A.*, CFE-CMStatistics 2015, University of London, UK
- [National communications](#)
- 30 May 2024 **Robust matrix completion for rating-scale data**, *Alfons, A., Archimbaud, A., Nordhausen, K. and Wilms, I.*, The 55th Statistical French days, Université de Bordeaux, France
- 4 July 2023 **Tandem clustering with invariant coordinate selection**, *Alfons, A., Archimbaud, A., Nordhausen, K. and Ruiz-Gazen, A.*, The 54th Statistical French days, Université libre de Bruxelles, Belgium
- 2 June 2023 **Tandem clustering with invariant coordinate selection (ICS)**, *Alfons, A., Archimbaud, A., Nordhausen, K. and Ruiz-Gazen, A.*, 11th VOC Conference, Dutch-Flemish Classification Society, Erasmus University Rotterdam, The Netherlands
- 24 October 2017 **Multivariate outlier detection with ICS**, *Archimbaud A.*, EDMITT Doctoral students day, Université Paul Sabatier, France
- 29 May 2017 **Mahalanobis distance and ICS for multivariate outlier detection**, *Archimbaud A., Nordhausen K. and Ruiz-Gazen A.*, The 49th Statistical French days, Avignon, France
- 4 April 2017 **ICSOutlier: An R package for unsupervised multivariate outlier detection with ICS**, *Archimbaud A., Nordhausen K. and Ruiz-Gazen A.*, The 7th meetings of French Young Statisticians, Ile de Porquerolles, France
- [International workshops](#)
- 2-3 November 2017 **The ICSShiny package**, *Archimbaud A., May J., Nordhausen K. and Ruiz-Gazen A.*, French - Finnish Higher Education, Research and Innovation Workshop (ERI-W) Future directions of Invariant Coordinate Selection and related methods, Toulouse School of Economics, France
- 10 August 2016 **Components selection for multivariate outlier detection with ICS**, *Archimbaud A., Nordhausen K. and Ruiz-Gazen A.*, 1st Seminar by CAST-Centre for Applied Statistics and Data Analytics: Recent developments in multivariate methods using multiple scatter matrices, University of Tampere, Finland
- [International Posters](#)
- 18-19 Mai 2015 **Comparison of statistical methods for multivariate outlier detection**, *Archimbaud A., Nordhausen K. and Ruiz-Gazen A.*, MATTER: Multivariate Analysis Today and WOMAT: Workshop On Multivariate Analysis Today, The Open University, UK
- [National Posters](#)
- 25 June 2015 **R packages for multivariate outlier detection**, *Archimbaud A., Nordhausen K. and Ruiz-Gazen A.*, The 4th French R meetings, Grenoble, France

Visiting

- 2023 Toulouse Business School, France, 5 weeks, (September).
- 2023 Toulouse School of Economics, France, 3 weeks, (February, April, November).
- 2022 Toulouse School of Economics, France, 1 month, (May, June, September).
- 2016 University of Tampere, Finland, from 02/08/2016 to 20/08/2016.
- 2015 University of Turku, Finland, from 16/08/2015 to 30/08/2015.

Grants

- 2016 Mobility Grant, University of Turku, Finland.
- 2015 & 2016 BQR, “Research Quality Bonus”, Université de Toulouse, France.
- 2016 AAC, “Aid for the international mobility of doctoral students, grant for research stays abroad”, Université de Toulouse, France.
- 2015 London Winter course scholarship “2015 CRoNoS Winter Course”, UK.

Awards and Recognition

- 2011-2012 Scholarship of Excellence, Toulouse School of Economics, France.
- 2008-2011 Merit scholarship, région Midi-Pyrénées, France.

Skills

Statistics/Econometrics

- Statistics Outlier Detection, Multivariate Analysis / dimension reduction / clustering (PCA, ICS, Mahalanobis distance, etc.), Robust Statistics, High Dimension Low Sample Size, Multiple Testing, Missing values, Functional Data Analysis, Datamining, Machine Learning, Data Visualization.
- Econometrics Applied and Spatial Econometrics, Panel Data, GLMM.

Information Technology

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|---------------|---|----------|---|
| Statistics | R , JMP , Python, SAS & SAS Miner, SPSS | Systems | Windows, Unix |
| Programming | R , SQL , JSL , Python, SAS, HTML, CSS | Computer | Microsoft Office, Open Office, \LaTeX . |
| Deployment | Docker, ShinyProxy, ShinyServer | Other | Degree C2i level 1 (2010) |
| Collaborative | Github, GitLab, Sourcetree | Agile | Trello, Jira |

Languages

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|--------|--------|---------|--|
| French | Native | English | Professional level. TOEIC Listening and reading: 950/990 (2018). |
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Additional training and workshops

- 10-2019 (21h) Shiny for production, R language, ThinkR, France.
- 09-2018 (4h) Machine Learning Crash Course, M. Gasse, Polytechnique Montréal, Canada.
- 09-2018 (8h) Google Cloud Platform Fundamentals: Big Data and Machine Learning, Montréal, Canada.
- 08-2018 (8h) Natural language processing workshop, MILA, Université de Montréal, Canada.
- 08-2018 (8h) Artificial Intelligence Symposium, Montréal, Canada.
- 2018 (70h) English courses (B2-C1 levels), Le Challenge Des Langues, Toulouse, France.
- 04-2018 Python for Data Science, MOOC.
- 01-2017 (6h) Copyright: Teaching, Research, University of Toulouse, France.
- 08-2016 (7h) Functional Data Analysis, 2016 CRoNoS Summer Course, Oviedo, Spain.
- 2016 (18h) Big Data, Sébastien Gadat and Maryan Morel, TSE, France.
- 2016 (25h) English courses, INSA, France.
- 12-2015 (20h) Robust methods and multivariate extremes, 2015 CRoNoS Winter Course, University of London, UK.
- 04-2015 (6h) Statistical depth, Davy Paindaveine, TSE, France.

Interests

- 2015-2021 Quarterly meetings of Statistician Engineers in Toulouse.
- Since 2015 Toulouse Data Science & Data Visualization meetups.