

## Pierre Michel

Data Scientist - Statistician

### Address (work)

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## RESEARCH INTERESTS

Applied mathematics, statistics, **machine learning** and **data science**.

- **Clustering** based on binary decision trees.
- Variable importance in **unsupervised learning**.
- **Feature selection** in classification.
- Applications to e-Health and health-related quality of life (computerized adaptive testing).

## SKILLS

- Methods of **classification** and **clustering**.
- Feature selection **algorithms** in high dimension (**big data**).
- **Machine learning** algorithms: programming in R, C/C++, Python.
- Development of clinical **decision-making** tools (help for interpretation or diagnosis).

## WORK EXPERIENCE

*Aix Marseille School of Economics*

Post-doc researcher

(August 2018 – today)

- Research activities: machine learning in economics, big data, applications to web platforms.
- Teaching activities: courses in mathematics for economists, programming in R and Python, data challenges (Kaggle).
- Co-organizer of the seminar “Big Data”.

*Aix Marseille Université*

Post-doc researcher in biostatistics and machine learning

(September 2017 – July 2018)

- Member of the research unit SESSTIM, UMR 1252.
- Main research: evaluation of a new multivariate feature selection method in classification: the  $\gamma$ -metric.
- Research activities biostatistics and machine learning: applications to e-Health devices data (ECG data).
- Research activities in natural language processing and text mining: analysis of a corpus of tweets from general practitioners.

Research and teaching assistant

(September 2016 – August 2017)

- Member of the Mathematical Institute of Marseille, UMR 7373.
- Teaching activities: applied mathematics, computer science (Bachelor and Master’s degrees).
- Research activities: biostatistics, applications to health-related quality of life data.

PhD Scholarship

(October 2013 – August 2016)

- Main subject: Item (feature) selection in clustering and computerized adaptive testing: applications to health-related quality of life data.
- Teaching activities: applied mathematics, computer science (Bachelor and Master’s degrees).

- Research activities: biostatistics, applications to health-related quality of life data, development and validation of computerized adaptive tests.

Engineer in statistics (May 2012 – September 2013)

- Member of the team EA 3279, Lab of Public Health.
- Statistical and psychometric studies.
- Health-related quality of life data analysis.
- Development and validation of health-related quality of life questionnaires.
- Contributions to research activities (publications, seminars and conferences).

*AXA France*

Engineer in actuarial science AXA France Life (October 2011 – March 2012)

- Member of the team Individual Solvency and Consolidation.
- Actuarial studies Solvency II.
- Determination of solvency indicators (EEV, NBV...).
- Portfolio valuation and new business.
- Actuarial methods for consolidation accounting.
- Financial prevision using Moses software.

Engineer in statistics AXA Individuals/Professionals South-East (October 2010 – September 2011)

- Member of the team Study Piloting and Activity Results.
- Real-time monitoring of business goals.
- Development of decision-making tools.
- Study piloting.
- Reporting, data management and statistics.

## EDUCATION

*PhD in applied mathematics (CNU section n°26),* December 2016  
 Statistics specialty  
 Mathematics Institute of Marseille, UMR 7373 Aix Marseille Université, Marseille, France

*Master's degree,* September 2011  
 Mathematics, computer science and new technologies  
 Aix Marseille Université, Marseille, France

*Bachelor's degree,* September 2009  
 Mathematics and computer science  
 Aix Marseille Université, Marseille, France

*High school diploma,* September 2006  
 Science section (Mathematics specialty)  
 High School Ismaël Dauphin, Cavaillon, France

## OTHER ACTIVITIES

President et co-founder of the AREVUS association, for the research, study and vulgarization in sciences, which aims to:

- Promoting scientific research and new technologies to a large public.
- Vulgarize and make available technology advances and the state-of-the-art.
- Contribute to cultural or scientific events.
- Develop a collaborative research framework.