

## A Top Data Science Team



ASAM research group

ASAM develops advanced statistical and econometric methods with a strong focus on:

- Fuzzy statistics
- Statistical modelling
- Machine learning methods

### Research Group



Prof. Dr Laurent Donzé 



Dr. Rédina Berkachy 



Dr. Julien Rosset 



MA Layal Lettry 



MSc Aurélien Pardo 



MA Thu Hang Nguyen 



MSc AI Amin Dhali 



MSc Julian Sampedro 



MA Katarzyna Grinberg 

### Research projects

- Methods in Fuzzy Statistics with applications

### Recent Mandates

- Probability of collapse on historical casing. Application of API 5C3 Annex F/H Methodology (S & L Consulting)
- Expertise 'Validierung des Modellansatzes zur Berechnung und Projektion der Einnahmen und Ausgaben der AHV' (Federal Social Insurance Office)
- SME Competitiveness Index (International Trade Center, joint agency of the World Trade Organization and the United Nations)

### Courses

#### Bachelor

- 1 Introduction à la statistique I
- 2 Statistique: approfondissement
- 3 Économétrie (Neuchâtel)

#### Master

- 1 Thèmes choisis de statistique multivariée
- 2 Inférence, évaluation et sélection de modèles
- 3 Statistique bayésienne
- 4 Méthodes de classification

The master courses are given every two years. Exercices and workshops complete the courses. Jupyter notebooks are supplied too. The software R are used in all applications.



### Latest Papers and Conferences

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|---|--|---|
|  | Berkachy, Rédina and Donzé, Laurent. FuzzySTs: Fuzzy Statistical Tools, R package. (2020)  |  |
|  | Berkachy, Rédina and Donzé, Laurent. Generalisation of the Signed Distance. <i>Mathematics</i> . 12. (2024)  |  |
|  | Donzé, Laurent and Berkachy, Rédina. Fuzzy inferences for the mean of a distribution. An empirical comparison of different approaches based on the survey of Health, Ageing and Retirement. (2025)               |  |
|  | Rosset, Julien and Donzé, Laurent. Approximated Fuzzy p-values by Bootstrapped Fuzzy Distributions and Fuzzy Hypotheses Testing. (Nov. 20, 2024a)  |  |
|  | Rosset, Julien and Donzé, Laurent. New Decision Rules for Fuzzy Statistical Inferences. <i>Combining, Modelling and Analyzing Imprecision, Randomness and Dependence</i> . pp. 405–412. (2024b)                  |  |
|  | Rosset, Julien and Donzé, Laurent. Fuzziest Estimate by Least Squares: Another Method to Estimate Fuzzy Orthogonal Linear Regression Models. <i>Computational Intelligence</i> . pp. 95–105. (2025a)             |  |
|  | Rosset, Julien and Donzé, Laurent. Fuzzy Confidence Intervals by Bootstrapped Fuzzy Distributions. <i>Information Processing and Management of Uncertainty in Knowledge-Based Systems</i> . pp. 247–253. (2025b) |  |
|  | Rosset, Julien and Donzé, Laurent. Selection of Fuzzy Regression Models by AIC. <i>Computational Intelligence</i> . pp. 595–608. (2026a)   |  |
|  | Rosset, Julien and Donzé, Laurent. Statistical Inferences by Bootstrapped Fuzzy Distributions. <i>SN Computer Science</i> . 7:pp. 87. (2026b)  |  |

