# Fares Grina

PhD student, Computer science

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# Research interests

Machine learning, uncertainty modeling, imbalanced data, generative models, model robustness, evidence theory, explainable AI

## Education

- 2021-present **PhD, computer science**, *University of Artois*, Béthune, France joint program (co-tutelle) with University of Tunis (Institut Supérieur de Gestion de Tunis, co-supervised by Pr. Zied Elouedi and Pr. Eric Lefevre)
  - 2018–2020 **Master, computer science for decision making**, *Institut Supérieur de Gestion de Tunis*, Tunis, Tunisia
    - Machine learning Graph theory Uncertainty modeling Stochastic process Text mining • Graphical models • Algorithm complexity • Optimization...
    - $_{\mbox{O}}$  Master thesis under the co-supervision of Pr. Zied Elouedi and Pr. Eric Lefevre.
  - 2015–2017 **License, Business informatics**, *Institut Supérieur de Gestion de Tunis*, Tunis, Tunisia
    - Algorithms and data structures Business intelligence Software architectures Web development Object Oriented Programming Operational research Web services Compilation Project management ...
    - O Graduation project under the supervision of Pr. Henda Belaid.

## **Publications**

F. Grina, Z. Elouedi, and E. Lefevre, "Evidential Generative Adversarial Networks for handling imbalanced learning," in *Symbolic and Quantitative Approaches to Reasoning with Uncertainty (ECSQARU), Arras, France, September 19–22, 2023, Proceedings 17* 

F. Grina, Z. Elouedi, and E. Lefevre, "Re-sampling of multi-class imbalanced data using belief function theory and ensemble learning," *International Journal of Approximate Reasoning*, vol. 156, pp. 1–15, 2023.

F. Grina, Z. Elouedi, and E. Lefevre, "Learning from imbalanced data using an evidential undersampling-based ensemble," in *Scalable Uncertainty Management:* 15th International Conference, SUM 2022, Paris, France, October 17–19, 2022, Proceedings, pp. 235–248, Springer, 2022.

F. Grina, Z. Elouedi, and E. Lefevre, "Déséquilibre multi-classes: une approche évidentielle de rééchantillonnage hybride," in *31e Rencontres Francophones sur la Logique Floue et ses Applications, LFA'2022*, pp. 255–262, Cépadus, 2022.

F. Grina, Z. Elouedi, and E. Lefevre, "Evidential hybrid re-sampling for multi-class imbalanced data," in *Information Processing and Management of Uncertainty in Knowledge-Based Systems: 19th International Conference, IPMU 2022, Milan, Italy, July 11–15, 2022, Proceedings, Part II, pp. 612–623, Springer, 2022.* 

F. Grina, Z. Elouedi, and E. Lefèvre, "Uncertainty-aware resampling method for imbalanced classification using evidence theory," in *Symbolic and Quantitative Approaches to Reasoning with Uncertainty (ECSQARU), Prague, Czech Republic, September 21–24, 2021, Proceedings 16*, pp. 342–353, Springer, 2021.

## Teaching experience

Sep 2023 - Teaching assistant, University of Artois, IUT, Béthune, France

- Dec 2023 O Dbject-oriented Programming
  - Network programming (sockets)
  - Multithreaded programming
  - O Python

# Relevant experience

- Feb 2020 Research internship, LARODEC, Tunis, Tunisia
- Nov 2020 O Conducted state of the art for uncertainty-aware algorithms handling imbalanced data. O Proposed a new oversampling technique based on belief function theory.
- Jul 2018 Data scientist, Epilert, Tunis, Tunisia
- Feb 2019 O Research and development of algorithms to deal with medical signals
  - Implementation of machine learning methods to predict epileptic seizures.
    - Communication with the medical team for clinical trials.
    - Developed the back-end of an IOT system.
- Feb 2018 Cybersecurity data science internship, Keystone group, Tunis, Tunisia
  - Jun 2018 O Designed and implemented a log analysis system with intrusion alerting
    - R&D in algorithms for detecting intrusions through Netflow logs

#### Skills

- Languages Python, R, Matlab, C/C++, Java, C#, Javascript
  - Libraries pytorch, tensorflow, keras, scikit-learn, open-cv, gdal, numpy, scipy, matplotlib
  - Others Docker, git, Linux, Elasticsearch, Kibana, Grafana, Hadoop, Spark, Azure Cloud, SQL/PLSQL

#### Langages

Arabe: native

French: fluent

English: fluent