Fares Grina

PhD student, Computer science

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Research interests

Machine learning, classification, imbalanced data, generative models, uncertainty modeling, model robustness, explainable AI, belief function theory

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...
- 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 ▪ ...
- 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.

Relevant experience

Feb 2020 -
Nov 2020
Research internship, *LARODEC*, Tunis, Tunisie
- Conducted state of the art for algorithms handling imbalanced data.
- Proposed a new oversampling technique based on belief function theory.

Jul 2018 -
Feb 2019
Data scientist, *Epilert*, Tunis, Tunisia
- 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 -
Jun 2018
Cybersecurity data scientist, *Keystone*, Tunis, Tunisia
- 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