CURRICULUM VITAE

Guillaume Metzler

Born the 7 of January 1992 in HAGUENAU, FRANCE
30 years old
Nationality : French

PhD in Computer Science
Associate Professor

https://guillaumemetzler.github.io

Current Affiliation

Teaching : Institute of Communication (ICOM) - University Lumière Lyon 2, University of Lyon.
Research : ERIC Laboratory, UR 3083 (K73) - 5 Avenue Pierre Mendès France, 69500 Bron.

Mail : guillaume.metzler@univ-lyon2.fr
Personal Website : https://guillaumemetzler.github.io

Research Topics

- Imbalanced (Binary) Classification
- Cost-Sensitive Learning
- Metric Learning and Representation Learning
- Boosting
- SemiDefinite Programming
- Domain Adaptation

Professional Experiences

09/2020 - ...	**Associate Professor**	
	ERIC Laboratory UR 3083, University Lumière Lyon 2, University of Lyon	
04/2020 - 08/2020	**Post-Doctoral Researcher**	
	Hubert Curien Laboratory UMR CNRS 5516, University Jean-Monnet, Unversity of Lyon	
09/2019 - 03/2020	**Post-Doctoral Researcher**	

Hubert Curien Laboratory UMR CNRS 5516, University Jean-Monnet, Unversity of Lyon

Education

2019	**PhD in Computer Science**

PhD from University Jean-Monnet, University of Lyon, defended the 25th of September 2019.
PhD Director : Marc Sebban (Professor)
Co-supervisors : Elisa Fromont (Professor) et Amaury Habrard (Professor)
PhD Topic : ***Learning from Imbalanced Data : an Application to Bank Fraud Detection***

Members of the Jury :
Yves Grandvalet (Professor) - President
Marianne Clausel (Professor) - Reviewer
Marc Tommasi (Professor) - Reviewer
Xavier Badiche (CEO BLITZ Business Services) - Invited Member
Brahim Belkasmi (R&D Engineer BLITZ Business Services) - Invited Member

Industrial PhD funded by the French ANRT and in Partnership with BLITZ Business Services Company.

2015	**Magistère of Fundamental et Applied Mathematics** UFR of Mathematics and Computer Science, University of Strasbourg
2015	**Master of applied Mathematics : Applied Mathematics to Biology and Medecine** University Claude Bernard, University of Lyon
2013	**Bachelor of Fundamental et Applied Mathematics** UFR of Mathematics and Computer Science, University of Strasbourg
2012	**Classe Préparatoire aux Grandes Ecoles (CPGE) - Mathematics and Physic (MPSI then MP)** Kléber High School, Strasbourg
2010	**Baccalauréat Scientifique** Alphonse Heinrich High School, Haguenau

Pedagogical Activities

Teaching

The table below lists the courses I have taught since my PhD. It is not representative of the number of hours of teaching done but it gives an overview of the teaching done.

The courses presented are those carried out at the Jean Monnet University (UJM), at the Lyon 2 University (ICOM) and at the Lyon Management School (EM Lyon).

Descriptions are given in French, unless the courses were provided in English.

Bachelor - Formation	Type	Instruction's hours	Course	Years
Niveau Licence 1				
Mathématiques, Informatique, Sciences Physiques pour l'Ingénieur et Chimie (MISPIC)	TD	8h	Outils Numériques - LaTeX	2019-2020
Mathématiques, Informatique, Sciences Physiques pour l'Ingénieur et Chimie (MISPIC)	TD/TP	32h	Outils Informatiques - Python	2019-2020
Mathématiques, Informatique, Sciences Physiques pour l'Ingénieur et Chimie (MISPIC)	TP	16h	Bases de Données Relationnelles	2019-2020
Niveau Licence 2				
Mathématiques et Informatiques Appliqués aux Sciences Humaines et Sociales (MIASHS)	CM/TD	21h/19h	Algèbre Linéaire & Analyses de Données	2021-2022
Niveau Licence 3				
Informatique Décisionnelle et Statistiques (IDS)	TD/TP	12h/7h	Statistiques Inférentielles I	2020-2022
Informatique Décisionnelle et Statistiques (IDS)	TD	19h	Statistiques Inférentielles II	2021-2022
Informatique Décisionnelle et Statistiques (IDS)	CM/TD/TP	21h/9h/9h	Systèmes d'Informations et Bases de Données Relationnelles	2020-2022

	Nature	Instruction's hours	Course	Years
Mathématiques et Informatiques Appliqués aux Sciences Humaines et Sociales (MIASHS)	TD	10.5h	Modèles Linéaires	2020-2022
Mathématiques et Informatiques Appliqués aux Sciences Humaines et Sociales (MIASHS)	TD	10.5h	Sondages	2020-2022

Master - Formation	Nature	Instruction's hours	Course	Years
Niveau Master 1				
Informatique	TP	14h	Statistiques Inférentielles	2020-2022
Machine Learning and Data Mining (MLDM, UJM)	CM/TD/TP	3h/3h/4h	Convex Optimization and Operational Research (English)	2016-2019
Colour in Informatics and Media Technology (COSI, UJM)	CM	5h	Introduction to Machine Learning (English)	2016-2017
Niveau Master 2				
Statistique et Informatique pour la Science des Données (SISE)	CM/TD	7h/14h	Fouilles de Données Massives	2020-2022
Business Intelligence et Big Data (BIBD)	CM/TD/TP	7h/14h	Fouilles de Données Massives	2020-2022

Internships Supervision (Exclude Master Students Research Internship)

Léa Abriel
University Lumière Lyon 2, 2nd year of Bachelor MIASHS - Economy-Management (2021)
Topic : *"Machine Learning for Fraud Detection with Ranking Methods"*
Duration : 6 weeks

Mathilde Rodrigues Da Rocha
University Lumière Lyon 2, 2nd year of Bachelor MIASHS - Cognitive Sciences (2021)
Topic : *"Study of Graph Neural Networks, applied to Cognitive Sciences"*
Duration : 5 weeks
Co-Supervisor : Antoine Gourru

Work-Study Program Supervision (M2 Students)

Mohamed Aziz Rais
University Lumière Lyon 2, 2nd year of Master Data Mining (2022)
Topic : *"Novelty Detection for Predictive Maintenance"*
Company : MODIS (Lyon)

TER Supervision (M2 Students from MALIA)

Mohamed Aziz Rais
University Lumière Lyon 2, 2nd year of Master Data Mining (2022)
Topic : *"Learning from Imbalanced Data with the Nearest-Neighbors Algorithm"*

Thibaut Martinet
University Lumière Lyon 2, 2nd year of Master Data Mining (2022)
Topic : *"An Introduction to Domaine Adaptation for Binary Classification"*

Farida Benchalal & Nour-Dass Hammadi
University Lumière Lyon 2, 2nd year of Master Data Mining (2021)
Topic : *"Learning from Imbalanced Data with the Nearest-Neighbors Algorithm"*

Involvement in Research Projects and Contracts

01/2022 - 12/2025   **ANR DIKé Project** - Project Member
Title : *Bias, fairness and ethics of compressed NLP models*
Project Leader : Christophe Gravier (LabHC, UMR CNRS 5516)

04/2020 - 08/2020   **ACADEMICS Poject (Call Scientific Breakthrough)** - Project Member as Post-Doctoral Researcher

09/2019 - 03/2020   **ANR LIVES Project** - Project Member as Post-Doctoral Researcher
Title : *Learning with Interacting Views*

Services, Reviews and Committe

Administrative responsibilities

11/2021 - ...   **Co-Responsible of Scientific Seminars** - ERIC Laboratory
                        Co-Responsible : Mohamed-Lamine MESSAI

Program Comittee Member

2021   Extraction et Gestion des Connaissances (EGC)
                        International Conference on Information Management and Big Data (SIM-Big)

Organization Committe Member

2023   Extraction et Gestion des Connaissances (EGC)

2021   Conférence sur l'Apprentissage Automatique (CAp)

2018   Multidisciplinary International Social Networks Conference (MISNC)

Review Activities

Conferences

2022   European Conference on Machine Learning (ECML)

2021   Extraction et Gestion des Connaissances (EGC)

2019   International Conference on Artificial Intelligence, Information Processing and Cloud Computing (AIIPCC)
                        International Conference on Artificial Intelligence and Statistics (AI-STATS)

2018   European Conference on Machine Learning (ECML)

2017   European Conference on Machine Learning (ECML)

Journals

2022   Applied Sciences (MDPI)

Sensors (MDPI)
Mathematics (MDPI)

2021   Expert Systems With Applications (ESWA)
Electronics (MDPI)
Mathematics (MDPI)
Pattern Recognition Letter (PRL)
Transactions on Pattern Analysis and Machine Learning (TPAMI)

2020   Applied Stochastic Models in Business Industry (ASMB)

Students Supervision : Post-Doc, PhD et Master Research Internship

PhD Supervision

Eliz Brithany
PhD started in January 2022 on the topic : *"Estimating the Life Span of an Organ After Transplantation"*.
Industrial PhD funded by the French ANRT and in partnership with Institut Georges Lopez (IGL)
<u>Supervision :</u> Julien Jacques (Professor, Director) et Guillaume Metzler

Supervision of M1 and M2 Student Research Internships

Alexiane Fraisse (M1)
University Jean-Monnet, 1st year of Master MLDM (2022)
Topic : *"Random Fourrier Features for PAC-Bayesian Domain Adaptation"*
Duration : 4 months
Co-Supervisors : Emilie Morvant and Paul Viallard

Irina Proskurina (M2)
University Clermont-Ferrand (2022)
Topic : *"Towards an Ethical Compression of Deep Learning Models"*
Duration : 6 months
Co-Supervisor : Julien Velcin

Publications

International Conferences

5. L.Gautheron, P.Germain, A.Habrard, G.Metzler, E.Morvant, M.Sebban and V.Zantedeschi, *Landmark-based Ensemble Learning with Random Fourier Features and Gradient Boosting*, In the 31st European Conference on Machine Learning & Principles and Practice of Knowledge Discovery in Databases (ECML-PKDD), Ghent, Belgique, Septembre 2020 (core ranking A).

4. R.Viola, R.Emonet, A.Habrard, G.Metzler and M.Sebban, *Learning from Few Positives : a Provably Accurate Metric Learning Algorithm to Deal with Imbalanced Data*, In the 29th International Joint Conference on Artifical Intelligence (IJCAI), Yokohama, Japon, Juillet 2020 (core ranking A*).

3. R.Viola, R.Emonet, A.Habrard, G.Metzler, S.Riou and M.Sebban, *An Adjusted Nearest Neighbor Algorithm Maximizing the F-Measure from Imbalanced Data*, In Proceedings in The 31st International Conference on Tools with Artificial Intelligence (ICTAI), Portland, Oregon, USA, Novembre 2019 (core ranking B).

2. K.Bascol, R.Emonet, E.Fromont, A.Habrard, G.Metzler and M.Sebban, *From Cost-Sensitive Classification to Tight F-Measure Bounds*, In Proceedings in The 22nd International Conference on Artificial Intelligence and Statistics (AISTATS), Naha, Okinawa, Japon, Avril 2019 (core ranking A).

1. G.Metzler, X.Badiche, B.Belkasmi, E.Fromont, A.Habrard and M.Sebban, *Tree-based Cost Sensitive Methods for Fraud Detection in Imbalanced Data*, In Proceedings in the 17th International Symposium on Intelligent Data Analysis (IDA), 's-Hertogenbosch, Pays-Bas, Octobre 2018 (core ranking A).

International Journals

2. R.Viola, R.Emonet, A.Habrard, G.Metzler, S.Riou and M.Sebban, *An Adjusted Nearest Neighbor Algorithm Maximizing the F-Measure from Imbalanced Data*, International Journal on Artificial Intelligence Tools (IJAIT), January 2021 (Q3).

1. G.Metzler, X.Badiche, B.Belkasmi, E.Fromont, A.Habrard and M.Sebban, *Learning Maximum Excluding Ellipsoids with Theoretical Guarantees*, Pattern Recognition Letter (PRL), September 2018 (Q2).

National Conferences

5. L.Gautheron, P.Germain, A.Habrard, G.Metzler, E.Morvant, M.Sebban and V.Zantedeschi, *Apprentissage d'ensemble basé sur des points de repères avec des caractéristiques de Fourier aléatoires et un renforcement du gradient*, Conférence pour l'Apprentissage Automatique (CAp), Vannes, Juin 2020.

4. R.Viola, R.Emonet, A.Habrard, G.Metzler and M.Sebban, *MLFP : Un algorithme d'apprentissage de métrique pour la classification de données déséquilibrées*, Conférence pour l'Apprentissage Automatique (CAp), Vannes, Juin 2020.

3. R.Viola, R.Emonet, A.Habrard, G.Metzler, S.Riou and M.Sebban, *Une version corrigée de l'algorithme des plus proches voisins pour l'optimisation de la F-mesure dans un contexte déséquilibré*, Conférence pour l'Apprentissage Automatique (CAp), Toulouse, Juillet 2019.

2. K.Bascol, R.Emonet, E.Fromont, A.Habrard, G.Metzler and M.Sebban, *Un algorithme d'optimisation de la F-Mesure par pondération des erreurs de classification*, Conférence pour l'Apprentissage Automatique (CAp), Rouen, Juin 2018.

1. G.Metzler, X.Badiche, B.Belkasmi, E.Fromont, A.Habrard and M.Sebban, *Apprentissage de Sphères Maximales d'exclusion avec Garanties Théoriques*, Conférence pour l'Apprentissage Automatique (CAp), Grenoble, Juin 2017.