Wassila Ouerdane

Assistant Professor in Computer Science

Artificial Intelligence & Decision Aid

Mai 2022

ADDRESS:	CentraleSupélec-Bâtiment Bouygues
	Laboratoire de Mathématiques et Informatique pour la Complexité et
	les Systèmes (MICS)
	3, rue Joliot Curie 91190, Gif-Sur-Yvettes
PHONE:	+33 1 75 31 66 78
EMAIL:	wassila.ouerdane@centralesupelec.fr
WEB SITE:	https://wassilaouerdane.github.io

EDUCATION

1 DECEMBER 2009

PhD in COMPUTER SCIENCE, Paris Dauphine University

Title: "Multiple Criteria Decision Aiding : a Dialectical Perspective."

Supervisors: Alexis Tsoukiàs (DR CNRS, LAMSADE, Paris Dauphine University) and Nicolas Maudet (Assistant Professor, LAMSADE, Paris Dauphine University) .

Jury:

Referees: Simon Parsons (PR, Brooklyn College NY), Patrice Perny (PR, Université Pierre et Marie Curie)
Members: Leila Amgoud (CR, CNRS, Université Paul Sabatier), Sylvie Coste-Marquis (MCF, Université d'artois), Thierry Marchant (PR, Ghent University Belgium), Christophe Labreuche (invité,Thales)

SEPTEMBER 2005

Master degree in COMPUTER SCIENCE. Paris Dauphine University
Title: "How to choose a process modeling tool in a process of capitalizing on knowledge? "

SEPTEMBER 2003

Engineering degree in COMPUTER SCIENCE. Mouloud Mammeri University (Algeria).
Title: Implementation of the AODV Routing protocol for Ad hoc mobile networks under Network Simulator.

Experience

March. 2019 -	**Assistant Professor** at CentraleSupélec, Computer Science. Mathematics and Informatics Lab (MICS).
Sept. 2010- Feb. 2019	**Assistant Professor** at CentraleSupélec, Computer Science. Industrial Engineering Lab (LGI).
Sept. 2009- Sept. 2010	**Teaching and Research Assistant** in Computer Science. Paris Dauphine University, France.
Sept. 2008- Sept. 2009	**Teaching and Research Assistant** in Computer Science. Paris Dauphine University, France.
Sept. 2005- Sept. 2008	**PhD Candidate** at LAMSADE. Paris Dauphine University, France.
Sept. 2005- Sept. 2008	**Teaching Assistant** at Paris Dauphine University, France.

Research Topics

Our research addresses questions related to knowledge representation and reasoning in the context of eXplainable AI (XAI). Our main motivations are designing and modeling adaptive decision support systems to construct and support justified automatic recommendations. Our research lies at the intersection of the fields of Multi-Criteria Decision Aiding (MCDA) and Artificial Intelligence (knowledge representation and reasoning).

Multi-Criteria Decision Aiding (MCDA) aims to develop decision models explicitly based on the construction of a set of criteria reflecting the relevant aspects of the decision-making problem. These n criteria (often conflicting) ($\mathcal{N} = \{1, 2, \ldots, n\}$ with $n \geq 2$) evaluate a set of alternatives $A = \{a, b, c, ...\}$ from different points of view. Several multi-criteria decision models exist. These models correspond to a parametric family of functions aggregating the evaluation according to each criterion into a solution of the decision problem. The MCDA literature considers different decision problems. We distinguish the *choice*, the *sorting*, the *pairwise comparison*, and the *ranking*. Unlike formulations of choice, ranking and pairwise comparison problems, which are comparative, sorting formulates the decision problem in terms of assigning alternatives to predefined ordered categories $C^1, C^2, ...C^p$, where C^1 (C^p, resp.) is the worst (best, resp.) category. The assignment of an alternative to the appropriate category is based on its intrinsic value and not on its comparison with other alternatives.

In addition, multi-criteria decision aiding results from an interaction between at least two agents, an analyst and a decision-maker, where the analyst's goal is to guide the decision-maker in the construction and understanding of the recommendations of a particular decision problem. Decision theory and Multiple Criteria Decision Analysis (MCDA) have established the theoretical foundation upon which many decision support systems have risen. The different approaches (and the formal tools coming along with them) have focused for a long time on how a "solution" should be established. But it is clear that the process involves many other aspects that are handled more or less formally by the analyst. For instance,

- the problem of accountability of decisions is almost as important as the decision itself. The decision-maker should then be convinced by a proper explanation that the proposed solution is indeed the best.

- it should be possible, for the decision-maker, to refine, or even contradict, a given recommendation. Indeed, the decision-support process is often constructive, in the

sense that the DM refines its formulation of the problem when confronted to potential solutions.

In addition, nowadays, decision support situations are omnipresent: they can arise when the analyst's role is assumed by a non-expert or even, in some cases, by an artificial agent. This means that several aspects - such as learning preferences, structuring the interaction, providing an explanation, handling user feedback,... - generally delegated to the human analyst should be ideally managed by the artificial agent. Thus, on the one hand, we need a formal theory on preferences and, on the other hand, a formal language making it possible to represent the dialogue and explain and communicate its results to convince the user that what is happening is both theoretically sound and operationally reasonable. In this context, the main (complementary) axes of my research work are:

Axis1: Modeling and generating explanations for recommendations for complex decision problems.

The question of the explanation (explainability/interpretability) of a decision, recommendation, algorithm outputs, etc., often associated in the literature with the acronym XAI (eXplainable AI), has become in recent years a crucial element in any "trusted algorithmic design". Indeed, for high-stakes AI applications, performance is not the only criterion to be taken into account. Such applications may require a relative understanding of the logic executed by the system. In this case, the end-user wants an answer to the question "Why?". eXplainable Artificial Intelligence (XAI) aims to provide methods that help empower AIs to answer this question. Even though interest in this question has exploded with machine learning tools and techniques, it dates back to expert systems, and since then, many works have emerged. Various questions are explored, such as: generating and providing explanations, identifying desirable characteristics of an explanation from the point of view of its recipient, evaluating the explanation produced by the system, etc.

In general, my work focuses on *the implementation of tools and algorithms for generating explanations for recommendations stemming from multicriteria models* which put user preferences and judgments at the heart of the reasoning. Generating explanations in the MCDA context is not a simple task; as different criteria are at stake, the user cannot fully assess their importance or understand how they interact. Moreover, once the user is faced with the result and the explanation, he may realize that it is not exactly what he expected. Therefore, it can make changes or provide new information that will have effects, for example, on the other phases of the decision aiding process (e.g., preferences learning step, see Axis 2). Thus, beyond making the result acceptable, presenting an explanation can impact the representation of the user's reasoning mode, which is at the base of the construction of the recommendation. Furthermore, the challenge with this question is that the concept of explanation varies depending on the decision context/problem and the decision model. In this context, my research work focuses on two decision models: one very widely used model, whether in decision theory or in machine learning, namely the additive model, and the other which is Non-Compensatory Sorting model. With the first model, the work aims to produce explanations for the pairwise comparison. In contrast, in the second, we seek to explain the assignment of an alternative to a given category. To answer these questions, different approaches and techniques are considered: argumentation schemes and mathematical programming. In particular, the question of constructing explanations comes down to formalizing argument (explanations) schemes that link premises (information provided or approved by the user, or deduced during the process of preference learning, and some additional hypotheses on the process of reasoning (from the assumptions of the model)) to a conclusion (e.g. the recommendation) Finally, I am also interested in other models/systems, for example, rule-based systems (classical, fuzzy) and optimization models.

- **Concerned thesis**: Manuel Amoussou (in progress), Mathieu Lerouge (in progress), Ismail Baaj (2022), Khaled Belahcène (2018), Karim El Mernissi (2017).

Axis2: modelling of the interaction and preferences for the construction of adaptive decision support systems.

At present, when decision aiding support or recommendation systems (online, for example) are in full expansion, an important aspect is that of succeeding in capturing and integrating the preferences, habits, and reactions of users to try to produce the most compelling and relevant recommendations from a user perspective. To meet this objective, I investigated two lines of research.

- **Setting up efficient preference learning mechanisms**: learning and eliciting preferences is an essential step in a decision support process. This step aims to incorporate user judgments as faithfully as possible into the decision model. It is crucial to develop relevant and reliable recommendations, and any flawed process would lead to unsubstantiated advice being provided to users. In addition, preferences are an essential object in many contexts, such as decision-making, machine learning, recommendation systems, social choice theory, and various sub-fields of artificial intelligence. In this context, the challenge is to build learning algorithms that are both efficient (from a computational point of view) while keeping humans in the loop to integrate and represent as faithfully as possible their expertise and their skills Knowledge.

  The basic idea of the multi-criteria decision support methodology is that, given a decision problem, we collect preferential information from the decision-maker to build an evaluation model that must reflect the point of view. (the value system) of the decision-maker and help him solve his decision problem. In other words, my research is interested in implementing algorithms for the automatic learning of preferences based on reference examples (a training set). Several models are studied: sorting, classification and point of reference models. To answer the question, different tools and methods are used for the formulation of preference learning algorithms: mathematical programming and logical formulations (SAT / MAxSAT).

  – **Theses concerned**: Ali Tlili (in progress), Pegdwendé Stéphane Minoungou (2022), Jinyan Liu (2016)

- **Design of adaptive dialogue protocols**: decision support is an interaction between at least two agents. Setting up an automatic system to support this interaction raises several questions: how to model the system's reasoning to allow "efficient" interaction with a user; how to make a formal link between the generation of the explanation and the improvement of the learning process. Indeed, faced with an explanation, a user can provide new information, invalidate old information, etc. These reactions strongly contribute to feeding other phases of the decision support process, such as the learning phase of the preference model. How to adapt classic preference learning algorithms to manage inconsistent user feedback (inconsistency, erroneous information, etc.) while automatically adjusting the model to the information provided by the user?

  In this context, my research aims to provide a formal language to represent such an interaction, explain it, communicate its results, and convince the user that what is happening is both theoretically sound and operationally reasonable. To do this, we propose to build and formalize an interaction protocol, which specifies the rules and conditions under which we can have a "coherent" interaction in a decision support context where the initiative is sometimes left to the user (e.g. ask for an explanation). We will rely on dialectical management and dialogue systems resulting from work in multi-agent systems and argumentation theory.

  – **Theses concerned**: Manuel Amoussou (in progress).

Finally, through the previous axes, our ambition is to obtain solid theoretical frameworks. Beyond this, we wish to prove the utility and the applicability of the theoretical propositions through real situations. The objective is to offer algorithmic solutions to real-world problems by combining multicriteria decision support tools and artificial intelligence.

- **Theses concerned**: Ali Tlili (in progress), Mathieu Lerouge (in progress), Manel Mammar (2015), Massinissa Mammeri (2017)

SUPERVISION

Thesis in progress

- Mathieu Lerouge. *Designing explanation schemes for recommendations stemming from Optimization Systems: application to scheduling problems for facility management* (MICS, CentraleSupélec- Decision Brain). Funding PSPC AIDA Project. Co-supervision 30% with Vincent Mousseau (MICS-CentraleSupélec), Céline Gicquel (LRI) (start December 2020).

- Manuel Amoussou. *Interactive explanations in Multi-criteria decision aiding: handling inconsistencies and levels of explanation.* (MICS, CentraleSupélec). Funding PSPC AIDA Project. Co-supervision 50% with Vincent Mousseau (MICS-CentraleSupélec) (start May 2020). **Publications:** [27].

- Ali Tlili. *Multicriteria Portfolio Management Optimization* (MICS, CentraleSupélec - Dassault Systèmes). Funding Dassault Systèmes. Co-supervision à 50% with Vincent Mousseau (MICS, CentraleSupélec), and Khaled Oumeima (Dassault Systèmes[1]) (start march 2018). **Publications:** [31, 40].

Defended Thesis

- Pegdwendé Stéphane Minoungou (13/05/2022). *Learning an MR-Sort model from non monotone data* (MICS, Centalesupélec -IBM Zurich). Funding IBM. Co-supervision 50% with Vincent Mousseau (MICS, CentraleSupélec) and Paolo Scoton (IBM Zurich).

  Publications: [29].

- Ismail Baaj (27/01/2022). *Generation of textual justifications in a fuzzy expert system.* (LIP6, Sorbonne Université- CEA List - MICS, CentraleSupélec). Funding CEA. Co-supervision 30% with Nicolas Maudet (LIP6, Sorbonne Université) and Jean-Philippe Poli (CEA List[2]) (start November 2018).

  – **Publications:** [10, 12, 31].

- Khaled Belahcène (05/12/2018). *A contribution to accountable decision aiding : explanations for the aggregation of preferences* (LGI, CentraleSupélec - LIP6, Sorbonne Université). Doctoral School INTERFACES research grant funding. Co-supervision (25%) with Vincent Mousseau (LGI, CentraleSupélec), Nicolas Maudet (Sorbonne Université) and Christophe Labreuche (Thales Research and Technology).

  – **Publications**: [1, 4, 6, 13-15, 32-35]

  – **Job**: Assistant Professor since 2019, Heudiasyc[3], UTC.

- Massinissa Mammeri (28/11/2017). *Decision aiding methodology for developing the contractual strategy of complex oil and gas projects* (LGI, CentraleSupélec - Total). Funding Total. Co-supervision 50% with Franck Marle (LGI, CentraleSupélec).

  – **Publications**: [18]

  – **Job**: Business Intelligence Consultant since 2017 (SYSTRA).

- Karim El Mernissi (13/12/2017). *Generation of explanations in rule-based systems* (LIP6-UPMC, LGI-CentraleSupélec, IBM). Funding IBM. Université Pierre et Marie Curie. Co-supervision 50% with Nicolas Maudet (LIP6, UPMC) and Pierre Feillet (IBM)

---

[1] https://www.3ds.com
[2] http://www-list.cea.fr/en/
[3] https://www.hds.utc.fr/en.html

- **Publications**: [16]

- **Job**: Data Scientist since 2019 (Orange, paris).

- Jinyan Liu (09/03/2016). Elicitation of preferences for a model based on reference points (LGI, Ecole Centrale Paris). Funding CSC scholarship. Co-supervision 50% with Vincent Mousseau (LGI, Ecole Centrale Paris).

    - **Publications**: [5, 21, 36, 40]

    - **Job**: Tech Lead Data Scientist since 2019 (Faurecia, Paris).

- Manel Maamar (07/12/2015). Multi-criteria modeling and optimization with anticipation of a Leads marketplace (LGI, Ecole Centrale Paris). Funding Place des Leads. Co-supervision 50% with Vincent Mousseau (LGI, Ecole Centrale Paris) and Alexandre Aubry (Place des Leads).

    - **Publications**: [20]

    - **Job**: Machine Learning Consultant since 2019 (Groupe Pact Novation, Paris).

Master Thesis

- Nathan Rougier. Artificial Intelligence methods for prediction and management of patient flows in hospital departments (MICS, CentraleSupélec). M2 (third year engineering). In collaboration with Gianluca Quercini (LISN, Université Paris Saclay). Supervision 70%. CentraleSupélec, 2021-2022. DataIA Funding.

- Antonin Duval. Deep reinforcement learning in the multi-agent framework in simulations (Thales Research & Technology). Msc IA[4]. Supervision 100%. CentraleSupélec, 2019-2020.

- Sanae Chouhani. Optimization of train movement in technicenter (SNCF). Master 2 OSIL. Supervision 100% CentraleSupélec, 2017-2018.

- Rihab Brahim. Improvement of industrial planning processes (LVMH). Master 2OSIL. Co-supervision (30%) with Yves Dallery. 2016-2017.

- Léonel de la Bretesche. Optimization method from an outsourced warehouse Application to the case of the Amazon-SMOBY warehouse (AMAZON). Master 2 OSIL. Supervision 100%. École Centrale Paris, 2014-2015.

- Massinissa Mammeri. Lead forecasting problem for a marketplace (Place des Leads). Master 2 MODO (Modélisation, Optimisation, Décision et Organisation). Co-supervision (25%) avec Denis Bouyssou (Université paris dauphine), Vincent Mousseau (ECP), Alexandre Aubry (Place des Leads). Université Paris-Dauphine. 2013-2014.

- Lisa JUNGE. Hybridization and electrification of CLAAS tractors: potentials and economic prospects, (CLAAS Tractor SAS). Master 2 OSIL. Supervision 100%. Ecole Centrale Paris, 2012-2013.

- Liu Jinyan. Inference of a multi-criteria multi-decision maker ranking: a method based on reference points. Research internship. Master 2 OSIL. Co-supervision (50%) with Vincent Mouseau. Ecole Centrale Paris, 2011-2012.

- Bian Yuan. Multiple criteria models for competence-based project staffing. Research internship. Master 2 OSIL (Optimisation des Systèmes Industriels et Logistiques), co-supervision (50%) with Vincent Mousseau. Ecole Centrale Paris, 2011-2012

---

[4]https://www.centralesupelec.fr/fr/msc-artificial-intelligence

	Number
Theses in progress	03
Defended Theses	07
Master Theses	09

Table 1: Supervisions summary

DISSEMINATION AND RESPONSIBILITIES

Contracts

- Funding of an M2 internship by the "M2 2022 internship call" of DataIA[5]. Subject: Artificial Intelligence methods for the prediction and management of patient flows in hospital services. In collaboration with Gianluca Quercini (LISN, Unviersité Paris Saclay).

- Scientific coordinator of WP-F (Generation and representation of explanations by the AIDA System) of the PSPC AIDA (AI for Digital Automation) project carried by IBM (MICS budget - 320k€). Start January 2020 (48 months).

- Coordination of a proposal in response to the "Expression of Interest - IBM Research Collaborations" through DATAIA[6]. This proposal resulted in the funding (120k€) of a CIFRE thesis which began in March 2019 in co-supervision with Vincent Mousseau (MICS, CentraleSupélec) and Paolo Scoton (IBM Zurich).

Prize and Distinction

- Doctoral and Research Supervision Bonus (2020-2024)
- Doctoral and Research Supervision Bonus (2015-2019)

Member of a Jury thesis

- Thesis of Fabien de Lacroix. Title: Dialogue to decide. Proactive expert recommendation and fair multi-agent decision making. (Université Lille 1, 2015).

- Thesis of Olivier Sobrie. Title: Learning preferences with multiple-criteria models (Université de Mons, 2016).

- Thesis of Tasneem Bani-Mustapha. Title: multi-hazards risk aggregation considering trustworthiness of the assessment (LGI, CentraleSupélec, 2019).

Participation in committees

- **Guest Editor** pour EURO Journal on Decision Processes (EJDP), Special issue: Supporting and Explaining Decision Processes by means of Argumentation 2018.

- **Reviewer for International Journals** : Journal of Autonomous Agents and Multi-Agent Systems, Multi-Criteria Decision Analysis (JMCDA), Annals of Operations Research, European Journal of Operation Research (EJOR), Argument and Computation, Operational Research - An International Journal (ORIJ), The International Journal of Management Science (OMEGA), Transaction on Fuzzy Systems.

- **PC international conferences and workshops** : AAAI (2021, 2020, 2019), AAMAS (2019), IJCAI (2022, 2021 (SPC), 2020, 2019, 2018), KR (2018), ECAI (2020), IPMU (2012), DA2PL[7] (2020, 2018, 2016, 2012).

---

[5]https://www.dataia.eu/appel-projets/appel-stages
[6]https://dataia.eu
[7]From Multiple Criteria Decision Aid to Preference Learning - https://event.unitn.it/da2pl2020/#home

- **PC national conferences and workshops** : JFSMA (2022, 2021, 2020), RJCIA (2018, 2016, 2017), MFI (2013).

Participation, Presentations in conferences and seminars

- Wassila Ouerdane. Title: Generation of Textual Explanations in XAI: the Case of Semantic Annotation. Explicability and symbolic reasoning in AI" seminar for the D2K[8] working group, from Data to Knowledge, resumes its meetings. 23 November 2021

- Wassila Ouerdane. Title: The challenges of "intelligent" decision support: from preference learning to explaining recommendations. Journée "Philosophie des sciences et Intelligence Artificielle[9]" (PS & IA 2020). 06 Feverier 2020.

- Wassila Ouerdane. Title: A Dialogue Game for Recommendation with Adaptive Preference Models. MICS Seminar. 24 June 2019.

- Wassila Ouerdane et Vincent Mousseau. Title: Interactive Recommendation and Explanation for Multiple Criteria Decision Analysis. Séminaire IRT SystemX[10]. 11 april 2018.

- Wassila Ouerdane. Title: Justified decisions are better than simple ones: explaining preferences using even swap sequences. In 26th European Conference on Operational Research. Rome, Italie. 1-4 July, 2013. Join work with Christophe Labreuche, Nicolas Maudet and Vincent Mousseau.

Working Groups

- Member of the GDR IA 'Explainability' working group (https://gt-explication.gitlab.io/)

- Member of the GDR IA (https://www.gdria.fr).

TEACHING

Since my recruitment as a lecturer (assistant professor), I had taught or taught at all university levels (Bachelor, Master) in the IT department at CentraleSupélec (when I arrived, École Centrale Paris). I am also involved in the Master of Science Artificial Intelligence [11] of CentraleSupélec. The summary of the teaching hours is presented in the Table3. I also supervise a number of end studies internship, gap year and group projects.

Period	Bachelor Level	Master Level	Total
2010-2011	85	36	121
2011-2012	67	150	217
2012-2013	130	150	280
2013-2014	67	150	217
2014-2015	85	33	118
2015-2016	120	158	278
2016-2017	125	126	250
2017-2018	112	135	247
2018-2019	112	135	247
2019-2020	200	50	250
2020-2021	78	32	110

Table 2: Summary Teaching hours

---

[8]https://digicosme.cnrs.fr/event/groupe-de-travail-de-la-donnee-a-la-connaissance/
[9]https://afia.asso.fr/psia-2020/
[10]https://www.youtube.com/watch?v=it50bttu4P8
[11]https://www.centralesupelec.fr/fr/msc-artificial-intelligence

The number of hours mentioned in this table count the equivalent hours of tutorials performed, generally distributed in lessons, tutorials and for certain courses in practical work and project monitoring. I would like to point out that this service was impacted by three maternity leaves: from January 17, 2011 to May 7, 2011; from October 17, 2014 to February 8, 2015 and from September 19, 2020 to March 18, 2021.

List of Current Courses and activities–2021/2022

- Information retrieval and processing of big data –112 students. Co-leader with Céline Hudelot (MICS, CentraleSupélec)

- Multi-agent system: architectures and reasoning –Master level, 50 students. Course leader

- Explainability of AI Systems - Master level, 60 students. Co-leader with Jean-Philippe Poli (CEA List)

- Leader of the project activity in AI, first and second year at CentraleSupélec, 80 students. Co-leader with Jean-Philippe Poli (CEA List)

ADMINISTRATION-RELATED ACTIVITIES

Sept. 2019- present	Member of the Restricted Scientific Council of CentraleSupélec
Sept. 2019- present	Elected member of the Scientific Council of the CentraleSupélec school
Sept. 2010- Fév. 2019	Elected member of the LGI laboratory council (Representative of lecturers and similar).

Wassila OUERDANE
Publications

Work in progress for submission

- Manuel Amoussou, Khaled Belahcène, Nicolas Maudet, Vincent Mousseau, and Wassila Ouerdane. Computing explanations for a multicriteria additive value based model (May 2022).

- Khaled Belahcène, Vincent Mousseau, Wassila Ouerdane, Marc Pirlot, and Olivier Sobrie. Multiple Criteria Sorting: a model-oriented survey (May 2022)

Articles under submission

- Ali Tlili, Oumaima Khaled, Vincent Mousseau and Wassila Ouerdane. Interactive Portfolio Selection Involving Multicriteria Sorting Models. Submitted to Annals of OR (minor revision), Mai 2022.

- Khaled Belahcène, Vincent Mousseau, Wassila Ouerdane, Marc Pirlot and Olivier Sobrie. Ranking with Multiple Points: Efficient Elicitation and Learning Procedures. Submitted to Computers & OR. April 2022.

- Pegdwendé Minoungou, Vincent Mousseau, Wassila Ouerdane and Paolo Scotton. Learning MR-Sort models from non-monotone data. Submitted to Annals of OR (second revision). April 2022

Articles published in international peer-reviewed journals

[1] Ali Tlili, Khaled Belahcène, Oumaima Khaled, Vincent Mousseau, Wassila Ouerdane: Learning non-compensatory sorting models using efficient SAT/MaxSAT formulations. European Journal of Operational Research 298(3): 979-1006 (2022)

[2] Alexandru-Liviu Olteanu, Khaled Belahcène, Vincent Mousseau, Wassila Ouerdane, Antoine Rolland, Jun Zheng: Preference elicitation for a ranking method based on multiple reference profiles. 4OR 20(1): 63-84 (2022).

[3] Anthony Hunter, Nicolas Maudet, Francesca Toni, Wassila Ouerdane. Foreword to the Special Issue on supporting and explaining decision processes by means of argumentation. EURO journal on decision processes, Volume 6, Issue 3–4, pp 235–236, 2018.

[4] Khaled Belahcène, Christophe Labreuche, Nicolas Maudet, Vincent Mousseau, Wassila Ouerdane. An efficient SAT formulation for learning multiple criteria non-compensatory sorting rules from examples. Computers and Operations Research, Elsevier, Volume 97, pp 58-71, 2018.

[5] Valentina Ferretti, Liu Jinyan, Vincent Mousseau, Wassila Ouerdane. Reference-based ranking procedure for environmental decision making: Insights from an ex-post analysis. Environmental Modelling and Software, Elsevier, Volume 99, pp.11-24. 2018.

[6] Khaled Belahcène, Christophe Labreuche, Nicolas Maudet, Vincent Mousseau, Wassila Ouerdane. Explaining robust additive utility models by sequences of preference swaps. Theory and Decision, Springer Verlag, Volume 82, Issue 2, pp 151-183, 2017.

[7] Wassila Ouerdane, Yannis Dimopoulos, Konstantinos Liapis, Pavlos Moraitis. Towards automating Decision Aiding through Argumentation. Journal of Multicriteria Decision Analysis, Volume 18, pp 289-309, 2011.

[8] Wassila Ouerdane. Multiple Criteria Decision Aiding: a Dialectical Perspective. 4OR: A Quarterly Journal of Operations Research, Springer Verlag, Volume 9, Issue 4, pp 429–432, 2011.

Articles published in international conferences with peer review

[9] Nicolas Belloir, Wassila Ouerdane, Oscar Pastor, Emilien Frugier, Louis-Antoine de Barmon, A Conceptual Characterization of Fake News: A Positioning Paper. In: Guizzardi, R., Ralyté, J., Franch, X. (eds) Research Challenges in Information Science. RCIS 2022. Lecture Notes in Business Information Processing, vol 446.pp 662–669. Springer, Cham. 2022. (*RCIS 2022 Best Forum Paper / Poster Award*).

[10] Ismaïl Baaj, Jean-Philippe Poli, Wassila Ouerdane, Nicolas Maudet. Representation of Explanations of Possibilistic Inference Decisions. ECSQARU 2021: European Conference on Symbolic and Quantitative Approaches with Uncertainty, Sep 2021, Prague, Czech Republic. pp.513-527

[11] Jean-Philippe Poli, Wassila Ouerdane, Regis Pierrard. Generation of Textual Explanations in XAI: the Case of Semantic Annotation. 2021 IEEE International Conference on Fuzzy Systems (FUZZ-IEEE), Jul 2021, Luxembourg, Luxembourg. pp.9494589

[12] Ismaïl Baaj, Jean-Philippe Poli, Wassila Ouerdane, Nicolas Maudet. Min-max inference for Possibilistic Rule-Based System. 2021 IEEE International Conference on Fuzzy Systems (FUZZ-IEEE), Jul 2021, Luxembourg, Luxembourg. pp.9494506

[13] Khaled Belahcène, Christophe Labreuche, Nicolas Maudet, Vincent Mousseau, Wassila Ouerdane. Comparing options with argument schemes powered by cancellation. Proceedings of the 28th International Joint Conference on Artificial Intelligence (IJCAI-19), Macao,China. pp 1537-1543, 2019.

[14] Khaled Belahcène, Yann Chevaleyre, Nicolas Maudet, Christophe Labreuche, Vincent Mousseau, and Wassila Ouerdane. Accountable Approval Sorting. Proceedings of 27th International Joint Conference on Artificial Intelligence and 23rd European Conference on Artificial Intelligence (IJCAI-ECAI 2018). Stockholm, Sweden. pp 70-76, 2018.

[15] Khaled Belahcène, Christophe Labreuche, Nicolas Maudet, Vincent Mousseau and Wassila Ouerdane. A Model for Accountable Ordinal Sorting. In proceedings of the 26th International Joint Conference on Artificial Intelligence (IJCAI-2017), Melbourne, Australia. pp 814-820, 2017.

[16] Karim El Mernissi, Pierre Feillet, Nicolas Maudet, Wassila Ouerdane. Introducing Causality in Business Rule-Based Decisions. In proceedings of the 30th International Conference on Industrial Engineering and Other Applications of Applied Intelligent Systems (IEA/AIE 2017), Arras, France. Springer, Advances in Artificial Intelligence: From Theory to Practice: pp.433-439, 2017.

[17] Mathieu Dernis, Wassila Ouerdane, Ludovic-Alexandre Vidal, Pascal Da Costa, Franck Marle. Assessment of Sustainable Strategies based on DMM Approach and Value Creation. In 19th International Dependency and Structure Modelling Conference (DSM), Helsinki, Finland. Understand, Innovate, and Manage your Complex System! 2017.

[18] Massinissa Mammeri, Franck Marle, Wassila Ouerdane. An assistance to identification and estimation of contractual strategy alternatives in oil and gas upstream development projects. In 19th International Dependency and Structure Modelling Conference (DSM), Helsinki, Finland. 2017, Understand, Innovate, and Manage your Complex System. 2017.

[19] Christophe Labreuche, Nicolas Maudet, Wassila Ouerdane, Simon Parsons. A dialogue game for recommendation with adaptive preference models. In proceeding of the 14th

International Conference on Autonomous Agents and Multiagent systems. Istanbul, Turkey. pp.959-967. 2015.

[20] Manel Mammar, Vincent Mousseau, Wassila Ouerdane, Alexandre Aubry. Internet Prospect's flow forecasting for a multi-period optimization model of offer/Demand assignment problem. International Conference on computers and Industrial Engineering (CIE45), Oct 2015, Metz, France

[21] Liu Jinyan, Vincent Mousseau, Wassila Ouerdane. Preference Elicitation from Inconsistent Pairwise Comparisons for Multi-criteria Ranking with Multiple Reference Points. In proceedings of the 14th International Conference on informatics and Semiotics in Organisations. Web of thingd, People and Information Systems (ICISO), Stockholm, Sweden. pp 120-130, 2013.

[22] Christophe Labreuche, Nicolas Maudet, Wassila Ouerdane. Justifying Dominating Options when Preferential Information is Incomplete. Proceedings of the 20th European Conference on Artificial Intelligence (ECAI'12), Montpellier, France. IOS Press, 242, pp.486-491, Frontiers in Artificial Intelligence and Applications. 2012.

[23] Myriam Merad, Wassila Ouerdane, Nicolas Dechy. Expertise and decision-aiding in safety and environment domains: what are the risks?. BERENGUER, C.; GRALL, A. ; GUEDES SOARES, C. Proceedings of The annual European Safety and Reliability (ESREL) conference. Troyes, France. CRC Press. London, pp.2317-2323, 2011.

[24] Christophe Labreuche, Nicolas Maudet, Wassila Ouerdane. Minimal and Complete Explanations for Critical Multi-attribute Decisions. In Proceedings of the 2nd International Conference on Algorithmic Decision Theory (ADT'2011), Piscataway New Jersey, United States. Springer, Lecture Notes in Computer Science. pp.121-134, 2011.

[25] Wassila Ouerdane, Nicolas Maudet, Alexis Tsoukiàs. Dealing with the dynamics of proof-standard in argumentation-based decision aiding. Proceedings of the 5th European Starting AI Researcher Symposium (STAIRS'10). co-located with ECAI 2010, Lisbon, Portugal. IOS Press, pp.225-237. 2010.

[26] Wassila Ouerdane, Nicolas Maudet and Alexis Tsoukiàs. Dealing with the dynamics of proof-standard in argumentation-based decision aiding. Proceedings of 19th European Conference on Artificial Intelligence (ECAI'10).Frontiers in Artificial Intelligence and Applications, IOS Press. Lisbon, Portugal. pp. 999-1000, 2010.

[27] Wassila Ouerdane, Nicolas Maudet, Alexis Tsoukiàs. Argument Schemes and Critical Questions for Decision Aiding Process. Proceedings of the 2nd international conference on Computational Models of Argument (COMMA2008), Toulouse, France. pp. 285-296, 2008

[28] Wassila Ouerdane, Nicolas Maudet, Alexis Tsoukias. Arguing over actions that involve multiple criteria: A critical review. In Proceedings of the 9th European Conference on Symbolic and Quantitative Approaches to Reasoning with Uncertainty (ECSQARU'07), Hammamet, Tunisia. pp.308–319, 2007.

Articles published in international workshops with peer review

[29] Pegdwendé Minoungou, Vincent Mousseau, Wassila Ouerdane, and Paolo Scotton. Learning an MR-Sort model from data with latent criteria preference direction. In the 5th workshop from multiple criteria Decision aid to Preference Learning (DA2PL), 5-6 November, 2020. University of Trento, Trento - Italy.

[30] Manuel Amoussou, Khaled Belahcène, Christophe Labreuche, Nicolas Maudet, Vincent Mousseau and Wassila Ouerdane. Explaining Robust Additive Decision Models: Generation of Mixed Preference-Swaps by Using MILP. In the 5th workshop from multiple

criteria Decision aid to Preference Learning (DA2PL), 5-6 November, 2020. University of Trento, Trento - Italy.

[31] Ismaïl Baaj, Jean-Philippe Poli and Wassila Ouerdane. Some Insights Towards a Unified Semantic Representation of Explanation for eXplainable Artificial Intelligence (XAI). Proceedings of the 1st Workshop on Interactive Natural Language Technology for Explainable Artificial Intelligence (NL4XAI). Association for Computational Linguistics. Tokyo, Japan. pp 14-19, 2019.

[32] Khaled Belahcène, Christophe Labreuche, Nicolas Maudet, Vincent Mousseau and Wassila Ouerdane. Challenges in Interactive Explanation and Recommendation for Decision Support. In The international Workshop on Dialogue, Explanation and Argumentation in Human-Agent Interaction (DEXAHAI [12]) Southampton UK. 2018.

[33] Khaled Belahcène, Vincent Mousseau, Wassila Ouerdane, Marc Pirlot and Olivier Sobrie. Ranking with Multiple Points: Efficient Elicitation and Learning Procedures. In the 4th workshop from multiple criteria Decision aid to Preference Learning (DA2PL), 2018. Poznan, Pologne.

[34] Khaled Belahcène, Oumaima Khaled, Vincent Mousseau, Wassila Ouerdane and Ali Tlili. A new efficient SAT formulation for learning NCS models: numerical results. In the 4th workshop from multiple criteria Decision aid to Preference Learning (DA2PL), 2018. Poznan, Pologne.

[35] Khaled Belahcène, Christophe Labreuche, Nicolas Maudet, Vincent Mousseau and Wassila ouerdane. Accountable classifications without frontiers. In the 3rd workshop, euro mini group, from multiple criteria Decision aid to Preference Learning (DA2PL), 2016, Paderborn, Germany.

[36] Liu Jinyan, Wassila Ouerdane, Vincent Mousseau. A Methaheuristic approach for preference Learning in multi criteria ranking based on reference points. In the 2nd workshop from multiple criteria Decision aid to Preference Learning (DA2PL), Nov 2014, Chatenay Malabry, France

Articles in international conferences or workshops (extended abstract)

[37] Khaled Belahcène, Vincent Mousseau, Wassila Ouerdane, Marc Pirlot and Olivier Sobrie. Ranking with Multiple Points: Efficient Elicitation and Learning Procedures. In the 25th International Conference on Multiple Criteria Decision-Making (MCDM), Istanbul, Turkie, 2019.

[38] Manel Mammar, Vincent Mousseau et Wassila Ouerdane. Multicriteria Modeling and Optimization of a market place of leads. In 22nd International Conference on Multiple Criteria Decision Making. Malaga (Spain) 17-21 juin 2013.

[39] Jinyan Liu, Vincent Mousseau and Wassila Ouerdane. Titre: Robust Elicitation of a Qualitative Ranking Model using Inconsistent Data. Dans 22nd International Conference on Multiple Criteria Decision Making . Malaga (Spain). 17-21 juin 2013.

[40] Manel Mammar, Vincent Mousseau et Wassila Ouerdane. Titre: Modélisation et optimisation multicritère d'une place de marché de Leads (Adéquation offre/demande). Dans 77th meeting of the European working group on multicriteria decision aiding (MCDA'77). Rouen, 2013.

[41] Jinyan Liu, Vincent Mousseau and Wassila Ouerdane. Titre: Preference Elicitation for Multi-Criteria Ranking with Multiple Reference Points. Dans 77th meeting of the European working group on multicriteria decision aiding (MCDA'77). Rouen, 2013.

---

[12] https://sites.google.com/view/dexahai-18/home

Articles published in National conferences or workshops with peer review

[42] Mathieur Lerouge, Céline Giquel, Vincent Moussea, and Wassila Ouerdane. "Designing methods for explaning solutions stemming from optimization systems, application to the workforce and scheduling routine", at the annual congress in Operations Research and Decision Support ROADEF 2022, organized by the French association ROADEF, on February 23rd to 25th 2022, in Lyon.

[43] Khaled Belahcène, Yann Chevaleyre, Nicolas Maudet, Christophe Labreuche, Vincent Mousseau and Wassila Ouerdane. Accountable Approval Sorting. 20ème congrès annuel de la société Française de Recherche Opérationnelle et d'Aide à la Décision (ROADEF'2019). Havre, France.

[44] Khaled Belahcène, Oumaima Khaled, Vincent Mousseau, Wassila Ouerdane and Ali Tlili. A new efficient SAT formulation for learning NCS models: numerical results. 20ème congrès annuel de la société Française de Recherche Opérationnelle et d'Aide à la Décision (ROADEF'2019). Havre, France.

[45] Khaled Belahcène, Christophe Labreuche, Nicolas Maudet, Vincent Mousseau, Wassila Ouerdane. Une formulation SAT pour l'apprentissage de modèles de classement multicritères noncompensatoires. 11e Journées d'Intelligence Artificielle Fondamentale, Jul 2017, Caen, France.

[46] Mathieu Dernis, Ludovic-Alexandre Vidal, Franck Marle, Wassila Ouerdane, Pascal Da Costa. Aide à la sélection de stratégies pour apporter des valeurs durables à des pays hôtes en contexte pétrolier. Congrès International de Génie Industriel CIGI, May 2017, Compiègne, France. 2017.

Book Chapter

[47] Wassila Ouerdane, Nicolas Maudet, Alexis Tsoukias. Argumentation Theory and Decision Aiding. J. Figueira, S. Greco, and M. Ehrgott. Trends in Multiple Criteria Decision Analysis, 142 (1), pp.177-208, 2010, International Series in Operations Research and Management Science.

PhD Thesis

[48] Wassila Ouerdane. Multiple Criteria Decision Aiding : a Dialectical Perspective. Thèse de Doctrorat. Université Paris Dauphine - Paris IX, Deccember, 2009.

	Number	Acronym/Name
Revues Inter.	08	4OR, EJDP, COR, Environmental Modelling & Software, Theory and Decision, JMCDA
Conf. Inter. avec comité de lecture	19	IJCAI 2019, 2018, 2017 (A*), AAMAS 2015 (A*), ECAI 2012, 2010 (A), RCIS 2022 (B), FuzzyIEEE 2021 (B), IEA/AIE'17 (C), ECSQARU 2021, 2007 (C), DSM 2017, ICISO 2013, ADT 2011, ESREL 2011, STAIRS 2010, COMMA 2008
Workshop Inter. avec comité de lecture	08	DA2PL 2020, 2018, 2016, NL4XAI 2019, DEXAHAI 2018,
Workshop Nat. avec comité de lecture	04	ROADEF 2019, JIAF 2017, CIGI 20217
Chapitre d'ouvrage	01	Trends in Multiple Criteria Decision Analysis

Table 3: Publications Summary