

Jérôme Lang

CNRS “Directeur de Recherche” (Senior Scientist)
LAMSADE, Université Paris-Dauphine, 75775 Paris Cedex 16, France
<http://www.lamsade.dauphine.fr/~lang/>

Born 1965
PhD, Université Paul Sabatier (Toulouse), 1991
“Habilitation à diriger des recherches”, 2003

Research Areas

- Computational Social Choice (Voting; Fair Division; Coalition Formation; Judgment Aggregation).
- Knowledge Representation and Reasoning (Reasoning about Beliefs, Knowledge, and Action; Preference Representation).

Editorial Responsibilities

- Advisory committee member of *Journal of Artificial Intelligence Research* (and associate editor until June 2015);
- Associate editor of *Artificial Intelligence Journal* until December 2016, and president of the 2016 Classic and Prominent Paper Award committee for 2016 and 2017.
- Associate editor of *Autonomous Agents and Multi-Agent Systems*;
- Associate editor of *Social Choice and Welfare*;
- Member of the editorial board of *Synthese*;
- Guest Editor of 8 special issues of journals: *Journal of Philosophical Logic* (2015), *Synthese* (2013), *International Journal of Game Theory* (2013), *Revue d'intelligence artificielle* (2012), *Journal of Applied Non-Classical Logics* (2011), *Autonomous Agents and Multiagent Systems* (2011), *Journal of Applied Logic* (2009), *Journal of Logic and Computation* (2008), *Applied Intelligence* (2001).
- Co-editor of the *Handbook of Computational Social Choice*, Cambridge University Press, 2016.

Responsibilities in Program Committees

- *Program chair* of the *27th International Joint Conference in Artificial Intelligence* (IJCAI 2018), joint with the *23rd European Conference in Artificial Intelligence* (ECAI 2018), Stockholm, July 2018.¹
- *Program chair* of the *16th Conference on Theoretical Aspects of Rationality and Knowledge*, 2017 (Liverpool, 24-26 July 2017).
- *Program co-chair* of the 9th Conference on Logic and the Foundations of Game and Decision Theory (LOFT-2010), Toulouse.
- *Program co-chair* of the IEEE/WIC/ACM International Conference on Intelligent Agent Technology (IAT-09), Milan.
- *Program co-chair* of the 11th International Conference on the Principles of Knowledge Representation and Reasoning (KR-2008), Sydney.
- *Program co-chair* of the First International Conference on Knowledge Science, Engineering and Management (KSEM'06), Guilin.
- *Program co-chair* of the First International Workshop on Computational Social Choice (COMSOC-2006), Amsterdam.
- *Poster track chair* of ECAI-2006.
- *Senior track co-chair* of AAAI-15.
- *Workshop co-chair* of ECAI-2012 and IJCAI-15.
- I am regularly on the program committee (as area chair, senior PC member, or PC member) of various conferences, including IJCAI, AAAI, ECAI, KR, UAI, ACM-EC, AAMAS, TARK, ADT.

Invited talks

Invited speaker at the following international conferences or workshops:

- 10th International Workshop on Nonmonotonic Reasoning (NMR-2004, Whistler, Canada, Juin 2004);

¹The acronyms stand for: *International Joint Conference on Artificial Intelligence*, *Conference of the Association for the Advancement of Artificial Intelligence* (AAAI), *European Conference on Artificial Intelligence* (ECAI), *International Conference on the Principles of Knowledge Representation and Reasoning* (KR), *International Conference on Uncertainty in Artificial Intelligence* (UAI), *ACM Conference on Electronic Commerce* (ACM-EC), *International Conference on Autonomous Agents and Multiagent Systems* (AAMAS), *Conference on Theoretical Aspects of Rationality and Knowledge* (TARK), *International Conference on Algorithmic Decision Theory* (ADT).

- 8th European Conference on Symbolic and Quantitative Approaches to Reasoning and Uncertainty (ECSQARU-2005, Barcelona, July 2005);
- 7th Conference on Logic and the Foundations of Game and Decision Theory (LOFT06, Liverpool, July 2006);
- Workshop of the Swedish AI Society (SAIS-06, Umeå, May 2006);
- 8th Augustus De Morgan Workshop (London, November 2006);
- 33rd International Conference on Current Trends in Theory and Practice of Computer Science (SOFSEM-2007, Harrachov, Czech Republic, January 2007);
- 11th European Conference on Logics in Artificial Intelligence (JELIA 2008, Dresden, September 2008);
- 18th International Conference on Conceptual Structures, (ICCS 2010, Kuching, Malaysia, July 2010);
- 22nd Benelux Conference on Artificial Intelligence (BNAIC 2010, Luxembourg, October 2010);
- 8th European Workshop on Multi-Agent Systems (EUMAS-10, Paris, December 10);
- Plate-forme de l'Association Française d'Intelligence Artificielle (PFIA-2011, Chambéry, May 2011);
- Summer workshop 2011-12 of the Centre for Mathematical Social Science (Auckland, New Zealand, February 2012);
- Invited tutorialist, 12th International Conference on Principles of Knowledge Representation and Reasoning (KR-2012, Rome, June 2012);
- Fourth International Conference on Algorithmic Decision Theory (ADT-15), joint invited talk with 13th International Conference on Logic Programming and Non-monotonic Reasoning (LPNMR 15, Lexington, USA, September 2015);
- Logic for Social Behaviour 3 (Zürich, February 2016);
- 8th International Conference on Agents and Artificial Intelligence (ICAART 2016, Rome, February 2016);
- 15th International Conference on Principles of Knowledge Representation and Reasoning (KR 2016, Cape Town, April 2016).

Awards and distinctions

- CNRS silver medal, 2017;²

²<http://www.cnrs.fr/fr/recherche/prix/medaillesargent.htm>

- EurAI (previously ECCAI) Fellow since 2009;³
- Best paper award, Tenth International Conference on Autonomous Agents and Multi-Agent Systems (AAMAS-2011);
- Best senior programme committee member award, Twenty-Fourth AAAI Conference on Artificial Intelligence (AAAI-10);
- Ray Reiter Award (best paper award), 9th Int. Conf. on Principles of Knowledge Representation and Reasoning (KR'04);
- Best reviewer award, 15th European Conference on Artificial Intelligence (ECAI-02);
- Three best paper awards at the French Artificial Intelligence Conference (RFIA): 2002, 2004, 2014.

Grants

- Leader of the ANR project “Computation, Communication, Rationality and Incentives in Collective and Cooperative Decision Making”, 2014-2018.
- Leader of the ANR project “Preference Handling and Aggregation on Combinatorial Domains”, January 2006 – October 2009.
- Co-leader of the project “De l’intelligence artificielle aux sciences de la décision : modèles formels et mise en oeuvre de processus de prise de décision individuelle et collective” (2002–2005), within the interdisciplinary program *Société de l’Information* (CNRS).
- Co-leader of the project “La pertinence dans l’interprétation d’actions” within the interdisciplinary program *Cognitive* (2001–2003).
- Leader of 4 bilateral projects.

Administration and responsibilities

- Member of the IJCAI Board of Trustees, 2015-2020.
- Member of the ECCAI Board 2010–2016.
- Member of the steering committee of the COST action IC1205 «Computational Social Choice» (2013-2016).
- Head of the group “Aide à la décision” at my institute (LAMSADE) since January 2015.

³https://www.eurai.org/awards_and_grants/fellows

- Head of the meta-group “Raisonnement et décision”, IRIT, 2005-2008.
- Vice-director of the French GDR I3 («Information, Interaction, Intelligence»), 2002-2005.
- Member of more than 25 recruiting committees (assistant professors; professors; INRA researchers) and of various other committees.
- Local organizer of an international conference (KR-2002, plus the satellite workshops: 300 attendees), a national conference (RJCIA-98), a EURO summer school (2001) and four Dagstuhl seminars (2005, 2007, 2007, 2016).

PhD supervision

1. Célia da Costa Pereira (1994-1998), *Planification d'actions en environnement incertain : une approche fondée sur la théorie des possibilités*; co-supervisor Frédéric Garcia; obtained in June 1998.
2. Céline Lafage (1997-2001), *Représentation des préférences en logique; application à la décision de groupe*; obtained in June 2001.
3. Thomas Polacsek (2000-2004), *Une logique pour la planification en environnement partiellement observable*; co-supervisor Andreas Herzig; obtained in June 2004.
4. Noël Laverny (2002-2006), *Raisonnement sur les actions et les observations, et programmes à base de croyances graduelles*; obtained in October 2006.
5. Elise Bonzon (2004-2007), *Modélisation des interactions entre agents rationnels : les jeux booléens*; co-supervisor Marie-Christine Lagasquie-Schiex; obtained in November 2007.
6. Sylvain Bouveret (2004-2007), *Allocation et partage équitable de ressources indivisibles : modélisation, complexité et algorithmique*; co-supervisor Michel Lemaître; obtained in November 2007.
7. Nasolo Ravoanjanahary (2004-2008), *Planification d'actions purement épistémiques*; co-supervisor Régis Sabbadin; obtained in December 2008.
8. Meghyn Bienvenu (2006-2009), *Consequence Finding in Modal Logic*; co-supervisors Andreas Herzig and Jérôme Mengin; obtained in May 2009.
9. Guillaume Ravilly-Abadie (2007-), *Préférences incomplètes et communication en décision collective*; co-supervisors Yann Chevaleyre and Nicolas Maudet); not defended.

10. Charles Lumet (2008-2012), *Modélisation, représentation et résolution de problèmes de partage équitable de biens indivisibles soumis au risque*; co-supervisors Sylvain Bouveret and Michel Lemaître; obtained in December 2012.
11. Nathanaël Barrot (2012-2016), *Aspects algorithmiques des élections à vainqueurs multiples*; co-supervisor Bernard Ries; obtained in March 2016.
12. Justin Kruger (2014-), *Aspects algorithmiques du vote randomisé*; co-supervisor Stéphane Airiau; to be defended in 2017 or 2018.

Participation to

- 57 PhD thesis committees, of which 32 as a reviewer.
- 18 HdR ('habilitation à diriger des recherches') committees, of which 5 as a coordinator and 3 as a reviewer.

Publications

Author or co-author of 36 articles in international journals, one edited book, 11 book chapters, 7 articles in collections, and more than 130 articles in the proceedings of international conferences, of which more than 80 articles in the proceedings of highly selective (acceptance rate below 30 %) international conferences, including : IJCAI (29), KR (18), ECAI (16), AAI (16), AAMAS (13), UAI (7), TARK (6). H-index (if it means anything) : 51.⁴

Appendix: list of my publications in peer-reviewed journals

1. Didier Dubois, Jérôme Lang and Henri Prade. Fuzzy Sets in Approximate Reasoning – Part 2: Logical Approaches. *Fuzzy Sets and Systems*, 40, 1991, 203-244, Elsevier.
2. Didier Dubois, Jérôme Lang and Henri Prade. Timed possibilistic logic. *Fundamenta Informaticae, Special Issue on Logics for Artificial Intelligence* (Z. Ras, ed.), XV, 1991, 53-57, IOS Press.
3. Luis Fariñas del Cerro, Andreas Herzig and Jérôme Lang. Ordering-Based Nonmonotonic Reasoning and Conditional Logics. *Artificial Intelligence Journal* 66, 375-393, 1994, Elsevier.

⁴<https://scholar.google.fr/citations?user=cNgZXNcAAAAJ&hl=fr&oi=ao>

4. Didier Dubois, Jérôme Lang and Henri Prade. Automated reasoning using possibilistic logic: semantics, belief revision, and variable certainty weights. *IEEE Transactions on Knowledge and Data Engineering* 6 (1), 64-71, 1994.
5. Célia da Costa Pereira, Frédérick Garcia, Jérôme Lang and Roger Martin-Clouaire. Planning with graded nondeterministic actions: a possibilistic approach. *International Journal of Intelligent Systems*, 12 (11/12), 1997, 935-962, Wiley.
6. Régis Sabbadin, Hélène Fargier and Jérôme Lang. Toward qualitative approaches to multi-stage decision making. *International Journal on Approximate Reasoning* 19, 1998, 441-471, Elsevier.
7. Salem Benferhat and Jérôme Lang. Conference Paper Assignment. *International Journal on Intelligent Systems* 16 (10), 2001, 1183-1192, 2001, Elsevier.
8. Jérôme Lang and Pierre Marquis. Removing inconsistencies in assumption-based theories through knowledge-gathering actions. *Studia Logica* 67: 179-214, 2001, Kluwer Academic Publishers.
9. Jérôme Lang, Paolo Liberatore and Pierre Marquis. Conditional independence in propositional logic. *Artificial Intelligence Journal* 141(1-2):79-121, 2002, Elsevier.
10. Jérôme Lang, Leendert van der Torre and Emil Weydert. Utilitarian desires. *International Journal of Autonomous Agents and Multi-Agent Systems*, 5 (2002) 329-363, 2002, Kluwer Academic Publishers.
11. Jérôme Lang, Paolo Liberatore and Pierre Marquis. Propositional Independence - Formula-Variable Independence and Forgetting. *Journal of Artificial Intelligence Research* 18:391-443, 2003, AAAI Press.
12. Jérôme Lang. Logical representation of preference and combinatorial vote. *Annals of Mathematics and Artificial Intelligence* 42: 37-71, 2004, Kluwer.
13. Sébastien Konieczny, Jérôme Lang and Pierre Marquis. DA2-merging operators. *Artificial Intelligence Journal* 157 (2004), 49-79, Elsevier.
14. Céline Lafage and Jérôme Lang. Propositional distances and compact preference representation. *European Journal of Operation Research* 160 (2005), 741-761, Elsevier.
15. Noël Laverny and Jérôme Lang. From Knowledge-based Programs to Graded Belief-based Programs, Part I: On-line Reasoning. *Synthese*, Springer Netherlands, vol. 147, no. 2, pp. 277-321, 2005.

16. Yann Chevaleyre, Paul E. Dunne, Ulle Endriss, Jérôme Lang, Michel Lemaître, Nicolas Maudet, Julian Padget, Steve Phelps, Juan A. Rodríguez-Aguilar, and Paulo Sousa. Issues in Multiagent Resource Allocation. *Informatica*, 30:3-31, 2006.
17. Vincent Conitzer, Tuomas Sandholm, and Jérôme Lang. When are elections with few candidates hard to manipulate. *J. ACM* 54(3): 14, 1-33, 2007.
18. Judy Goldsmith, Jérôme Lang, Mirosław Truszczynski, and Nic Wilson. The Computational Complexity of Dominance and Consistency in CP-Nets. *J. Artif. Intell. Res. (JAIR)* 33: 403-432 (2008).
19. Sylvain Bouveret, Jérôme Lang. Efficiency and Envy-freeness in Fair Division of Indivisible Goods: Logical Representation and Complexity. - *J. Artif. Intell. Res. (JAIR)* 32: 525-564 (2008).
20. Yann Chevaleyre, Ulle Endriss, Jérôme Lang, and Nicolas Maudet. Preference Handling in Combinatorial Domains: From AI to Social Choice. *AI Magazine*. Special Issue on Preferences., 2008.
21. Jérôme Lang and Pierre Marquis. On propositional definability. *Artif. Intell.* 172(8-9): 991-1017 (2008).
22. Jérôme Lang and Lirong Xia. Sequential composition of voting rules in multi-issue domains. *Mathematical Social Sciences* 57(3): 304-324 (2009).
23. Elise Bonzon, Marie-Christine Lagasquie-Schiex, and Jérôme Lang. Dependencies between players in Boolean games. *Int. J. Approx. Reasoning* 50(6): 899-914 (2009).
24. Hans P. van Ditmarsch, Andreas Herzig, Jérôme Lang, and Pierre Marquis. Introspective forgetting. *Synthese* 169(2): 405-423 (2009)
25. Elise Bonzon, Marie-Christine Lagasquie-Schiex, Jérôme Lang, and Bruno Zanuttini. Compact preference representation and Boolean games. *Autonomous Agents and Multi-Agent Systems* 18(1): 1-35 (2009).
26. Joel Uckelman, Yann Chevaleyre, Ulle Endriss, and Jérôme Lang. Representing Utility Functions via Weighted Goals. *Math. Log. Q.* 55(4): 341-361 (2009)
27. Florence Dupin de Saint-Cyr and Jérôme Lang. Belief extrapolation (or how to reason about observations and unpredicted change). *Artif. Intell.* 175(2): 760-790 (2011)

28. Jérôme Lang, Maria Silvia Pini, Francesca Rossi, Domenico Salvagnin, Kristen Brent Venable, and Toby Walsh. Winner determination in voting trees with incomplete preferences and weighted votes. *Autonomous Agents and Multi-Agent Systems* 25(1): 130-157 (2012)
29. Elise Bonzon, Marie-Christine Lagasque-Schiex and Jérôme Lang, Effectivity functions and efficient coalitions in Boolean games, *Synthese*. Volume 187, Issue 1, p. 73-103. 2012.
30. Yann Chevaleyre, Jérôme Lang, Nicolas Maudet, Jérôme Monnot, and Lirong Xia: New candidates welcome! Possible winners with respect to the addition of new candidates. *Mathematical Social Sciences* 64(1): 74-88 (2012)
31. Michael Wooldridge, Ulle Endriss, Sarit Kraus, and Jérôme Lang. Incentive engineering for Boolean games. *Artificial Intelligence*, Volume 195, February 2013, Pages 418–439.
32. Andreas Herzig, Jérôme Lang and Pierre Marquis. Propositional Update Operators based on Formula/Literal Dependence. *ACM Transactions on Computational Logic*, 14(3), 2013.
33. Edith Elkind, Jérôme Lang, and Abdallah Saffidine. Condorcet Winning Sets. *Social Choice and Welfare* 44(3): 493-517 (2015).
34. Haris Aziz, Markus Brill, Felix A. Fischer, Paul Harrenstein, Jérôme Lang, and Hans Georg Seedig: Possible and Necessary Winners of Partial Tournaments. *J. Artif. Intell. Res. (JAIR)* 54: 493-534 (2015).
35. Piotr Skowron, Piotr Faliszewski, and Jérôme Lang, Finding a Collective Set of Items: From Proportional Multirepresentation to Group Recommendation, *Artificial Intelligence*, 241: 191-216 (2016).
36. Jérôme Lang, Gabriella Pigozzi, Marija Slavkovic, Leendert van der Torre and Srdjan Vesic. A partial taxonomy of judgment aggregation rules and their properties. *Social Choice and Welfare*, 48(2):327–356, 2017.