

Jean-Marie LAGNIEZ, PhD

Professional address:

CRIL research center, Artois University
rue Jean Souvraz SP18, 62307 Lens, France

☎ (+33)6 12 44 27 25

✉ lagniez@cril.fr

Affiliation

I currently hold a professor position at Artois University in Lens.

Personal Data

Born on November 29th, 1983 in Lens (France), french national, in a civil partnership.

Higher Education

- 2019 Habilitation à diriger des recherches, CRIL, Artois University (Lens, France), December 5th 2019
- 2011 Doctorat en informatique, CRIL, Artois University (Lens, France), December 5th 2011

Professional Experience

- From Dec 20 Professor, Artois University, Lens, France
- Aug 20 – Dec 20 Maître de conférences, Artois University, Lens, France
- Sep 19 – Aug 20 Principal Scientist, Huawei Technologies Ltd, Paris, France
- Sep 14 – Sep 19 Maître de conférences, Artois University
- Mar 13 – Sep 14 Postdoctoral position, CRIL research center, Artois University, Lens, France
- Feb 12 – Mar 13 Postdoctoral position, Institute for Formal Models and Verification, JKU, Linz, Austria
- Sep 11 – Jan 12 Temporary Researcher and Teaching Assistant (ATER), Artois University, Lens, France
- 2008 – 2011 Doctoral position and higher education monitor, Artois University, Lens, France

Participation in Research Projects

- 2025 – 2029 ANR PRME Ceradoc: Creating Algorithms for Compact Decomposable Circuits (PI)
- 2025 – 2027 Bilateral project France/China PHC Cai Yuanpei (PI). SAT Solver 2.0: Integrating Stochastic Search and Circuit-Based Proof Technologies
- 2025 – 2026 ESA ARIADNA'25 (PI). Counting over $\mathbb{Q}[i]$ and Interfacing with Rust Applications
- 2020 – 2023 ANR CHAIRE IA EXPEKCTATION: EXPLAINable artificial intelligence: a KnowlEdge CompilaTion FounDATION
- 2019 – 2023 ANR PING/ACK: Pre-traitement d'informations pour la résolution de tâches complexes/Compilation avancée de connaissances
- 2015 – 2019 ANR SATAS: SAT as Service
 - 2018 PEPS INSMI-INS2I I3A SAT4EX: Deep Learning For Deep Solving
 - 2018 PEPS S2IH INS2I SAT4EX: SAT based approach to extract EXplanation
- 2017 – 2018 Bilateral project France/Czech Republic on knowledge compilation for constraint programming
 - 2017 PEPS JCJC INS2I DISCO: DIStributed COMpilation
- 2012 – 2013 RiSE project: Rigorous Systems Engineering

Research Activities

- I am mainly interested in developing, implementing and evaluating algorithms for the practical solving of instances of "Beyond NP" problems. This includes knowledge compilers (used for efficient model counting, a key issue for many forms of probabilistic reasoning), preprocessors (for simplifying the inputs), reasoners suited to modal logics, and other tools for generating minimal unsatisfiable subset/maximal consistent subsets, which are fundamental tasks for a number of artificial intelligence problems. I am also interested in developing XAI methods for tree ensemble models.
- Main topics: AI, knowledge representation, automated deduction, knowledge compilation, argumentation, constraint satisfaction problems (SAT and CSP), consistency restoration (MUS and MCS) and XAI
- Publications: 12 articles in international journals, 80 communications in the proceedings of international conferences. Among them are 61 papers in the following A* or A-ranked conferences: IJCAI, AAAI, ECAI, IJCAR, LPAR, SAT, CP
- Design, implementation and evaluation of pieces of software (those which are still state-of-the-art today are spotted):
 - XAI: PyXAI (<https://www.cril.univ-artois.fr/software/pyxai/>)
 - Knowledge Compilers: EADT (www.cril.fr/KC/eadt.html), piFBDD, D4 (www.cril.fr/KC/d4.html: state-of-the-art), MDDG (www.cril.fr/KC/mddg.html state-of-the-art), and d-DNNF reasoner (www.cril.fr/KC/d-DNNF-reasoner.html):
 - Projected Model Counter: projMC (www.cril.fr/KC/projmc.html: state-of-the-art)
 - Parallel Model Counter: DMC (www.cril.fr/KC/dmc.html: state-of-the-art)
 - MCS Extractor and Enumerator: CMP (www.cril.fr/documents/cmp/) and Enum-MCSes (www.cril.fr/enumcs/: state-of-the-art)
 - Preprocessors for model counting: PMC (www.cril.fr/KC/pmc.html) and B+E (www.cril.fr/KC/bpe2.html: state-of-the-art)
 - Incremental SAT Solvers: MiniAbbreviation and Glucose (www.labri.fr/perso/lisimon/glucose/: state-of-the-art)
 - Local Search Solvers: SAT-WalkSat, CSP-WalkSat and PB-WalkSat
 - Backtracking Solvers: Nacre (www.cril.fr/~glorian/), RCL-SAT, MinisatPsmDyn and RCL-CSP
 - Hybrid Solvers: SATHYS and FAC-Solver (CSP)
 - Parallel Solvers: D-Syrup (www.cril.fr/dsyrup/: state-of-the-art) and Ampharos (www.cril.fr/ampharos/)
 - Modal Logic Solver: MoSaic (www.cril.fr/~montmirail/mosaic/: state-of-the-art)
 - Abstract Argumentation Solver: CoQuiAAS (www.cril.fr/coquiaas/)
 - Bayesian Network Encoder: bn2cnf (www.cril.fr/KC/bn2cnf.html: state-of-the-art)
 - Belief Revision and Belief Merging: br2cnf (www.cril.fr/KC/br2cnf.html: state-of-the-art) and bm2cnf (www.cril.fr/KC/bm2cnf.html: state-of-the-art)

Awards

- since 2020 Since 2020, I have consistently secured a place on the podium in the International Competition on Model Counting <https://mccompetition.org>
- 2025 UAI Best Paper Award
- 2020 ECAI Distinguished Paper
- 2018 Gold medal of the CSP Minitrack at the 2018 XCSP3 Competition <http://xcsp.org/competition>

- since 2015 I have consistently secured a place on the podium in International Competition on Computational Models of Argumentation <http://argumentationcompetition.org/>
- 2012 ICTAI Best Paper Award
- 2011 SAT Best Paper Award

Co-supervision of Ph.D. Students

- 2024 – Anschaire Perard “Production de schémas décisionnels pour atteindre l’efficacité économique, sociale et environnementale en matière de management de parcs de bâtiments et des infrastructures associées, en milieux urbains et péri-urbains” (on going)
- 2023 – Mengda Xing “Utiliser l’intelligence artificielle pour l’optimisation du fonctionnement des électrodes de batterie” (on going)
- 2022 – 2025 Chi Tran Nguyen Duong “Learning Interpretable Circuits” (defended)
- 2020 – 2024 Steve Bellart “Compilation de connaissances pour l’IA explicable et robuste” (defended)
- 2019 – 2024 Marie Micelli “Explication via les weak core” (defended)
- 2016 – 2019 Gaël Glorian “Optimisation distribuée pour les problèmes combinatoires sous contraintes de grande taille” (defended)
- 2015 – 2018 Yacine Izza “Informatique ubiquitaire : techniques de curage d’informations perverses” (defended)
- 2015 – 2018 Valentin Montmirail “Résolution pratique de la cohérence de formules en logique modale” (defended)
- 2014 – 2017 Nicolas Szczepanski “SAT en Parallèle” (defended)
- 2012 – 2016 Samuel Thomas “Compilation de connaissances pour le comptage de modèles” (defended)

Elective Positions

- 2015 – Elected member of of the laboratory council (CRIL, France)
- 2023 – Co-head of one of three research axes of the laboratory (CRIL, France)
- 2023 – Member of the GDR-Radia (CNRS Lab) as responsible for the Socio-economic World Relations
- 2023 – 2026 Invited member of the laboratory council (CRIL, France)
- 2019 – 2020 Invited member of the AFIA board (Association Française pour l’Intelligence Artificielle)
- 2017 – 2021 Elected member of the AFPC board (Association Française pour la Programmation par Contraintes)
- 2008 – 2011 Representative of PhD students and postdoc, laboratory council (CRIL, France)
- 2008 – 2009 Engineering Sciences graduate school council (Lille, France)

Research Assessment

- Responsible for socio-economic relations inside the ‘GDR RADIA’ (CNRS research group)
- Coordinator of the working group of the ‘GDR IA’ (CNRS research group) on Representation and Algorithms in Practice (RAP)
- Participation in program committees of international conferences or workshops (the last ones are IJCAI’26, ICML’26, KR’26)
- Reviewer for international conferences and journal: ISAT, CP, DATE, CAV, SAT, ICALP, JSAT, Constraint, AIJ, JAIR and IJAIT