

# Publications – Dr. Sagar Malhotra

The following is a list of my peer-reviewed publications, ordered as conference, journal and (peer-reviewed) workshop contributions. I indicate the conference ranking using the [CORE ranking system](#) in parentheses: A\* denotes a flagship international conference (top ~8% of all computer science conferences), while A signifies an internationally excellent conference (top ~15%). The *Artificial Intelligence Journal* is widely recognized as one of the leading journals in the fields of artificial intelligence and machine learning.

Since 2022, I have produced **9 top-tier publications** (i.e. in conferences ranked A\* or A, or in Q1 journals) and **2 award winning publications**. Additionally, I have supervised multiple students, in different roles, leading to publications. I have underlined such supervised student coauthors.

## Journal Publications

- 2025 **Sagar Malhotra, Davide Bizzaro and Luciano Serafini**  
Lifted Inference beyond First Order Logic  
*Artificial Intelligence Journal*, 2025.  
[AIJ \(Q1 Journal\)](#)

## Conference Publications

- 2025 **Alexander Pluska and Sagar Malhotra**  
On Local Limits of Sparse Random Graphs:  
Color Convergence and the Refined Configuration Model  
*Neural Information Processing Systems* 2025.  
[NeurIPS 2025 \(CORE Rank A\\*, 24.52% acceptance rate\)](#)
- 2025 **Peter Blohm, Patrick Indri, Thomas Gärtner, Sagar Malhotra**  
Probably Approximately Global Robustness Certification  
*International Conference of Machine Learning* 2025.  
[ICML 2025 \(CORE Rank A\\*, 26.9% acceptance rate\)](#)
- 2025 Steve Azzolin<sup>†</sup>, **Sagar Malhotra<sup>†</sup>**, Andrea Passerini, Stefano Teso  
Beyond Topological Self-Explainable GNNs: A Formal Explainability Perspective  
*International Conference of Machine Learning* 2025.  
[ICML 2025 \(†Equal Contribution, CORE Rank A\\*, 26.9% acceptance rate\)](#)
- 2024 Alexander Pluska, Pascal Welke, Thomas Gärtner and **Sagar Malhotra**.  
Logical Distillation of Graph Neural Networks  
*International Conference on Principles of Knowledge Representation and Reasoning* 2024  
[KR 2024 \(CORE Rank A\\*, 17% acceptance rate in the special track.\)](#)  
**Honorable Mention Award**
- 2024 **Florian Chen, Felix Weitkämper, and Sagar Malhotra**.  
Understanding Domain-Size Generalization in Markov Logic Networks  
*Machine Learning and Knowledge Discovery in Databases. Research Track - European Conference*  
[ECML PKDD 2024 \(CORE Rank A, 24% acceptance rate\)](#)
- 2024 Alessandro Daniele, Tommaso Campari, **Sagar Malhotra** and Luciano Serafini  
Simple and Effective Transfer Learning for Neuro-Symbolic Integration  
*International Conference on Neural-Symbolic Learning and Reasoning, NeSy 2024*  
[NeSy 2024](#)  
**Best Paper Award**

- 2023 Alessandro Daniele, Tommaso Campari, **Sagar Malhotra** and Luciano Serafini.  
 Deep Symbolic Learning: Discovering Symbols and Rules from Perception  
*International Joint Conference on Artificial Intelligence 2023*  
[IJCAI 2023](#) (CORE Rank A\*, 15% acceptance rate)
- 2022 **Sagar Malhotra** and Luciano Serafini  
 On Projectivity in Markov Logic Networks  
*Machine Learning and Knowledge Discovery in Databases. Research Track - European Conference ECML PKDD 2022* (CORE Rank A, 26% acceptance rate).
- 2022 **Sagar Malhotra** and Luciano Serafini  
 Weighted Model Counting in  $\text{FO}^2$  with Cardinality Constraints and Counting Quantifiers:  
 A Closed Form Formula  
*AAAI Conference on Artificial Intelligence 2022*  
[AAAI 2022](#) (CORE Rank A\*, 15% acceptance rate, accepted as oral presentation)
- 2021 **Sagar Malhotra** and Luciano Serafini  
 A Combinatorial Approach to Weighted Model Counting in the Two Variable Fragment  
 with Cardinality Constraints  
*International Conference of the Italian Association for Artificial Intelligence 2019*  
[AIxIA 2021](#)
- Workshop Publications (Peer-reviewed)**
- 2025 Klaus Weinbauer, Tieu-Long Phan, Peter F. Stadler, Thomas Gärtner, and **Sagar Malhotra**  
 Prime Implicant Explanations for Reaction Feasibility Prediction  
*Workshop on Advances in Interpretable ML and AI, ECML-PKDD 2025*  
[AIMLAI](#)
- 2024 Patrick Indri, Peter Blohm, Anagha Athavale, Ezio Bartocci, Georg Weissenbacher, Matteo Maffei, Dejan Nickovic, Thomas Gärtner, **Sagar Malhotra**  
 Distillation based Robustness Verification with PAC Guarantees  
*Next Generation of AI Safety Workshop, ICML 2024*  
[NextGenAISafety, ICML 2024](#)
- 2024 Alexander Pluska, Pascal Welke, Thomas Gärtner and **Sagar Malhotra**.  
 Logical Distillation of Graph Neural Networks  
*Workshop on Mechanistic Interpretability, ICML 2024*  
[MI Workshop, ICML 2024](#)
- 2023 Alessandro Daniele, Tommaso Campari, **Sagar Malhotra** and Luciano Serafini.  
 Deep Symbolic Learning: Discovering Symbols and Rules from Perception  
*International Workshop on Neural-Symbolic Learning and Reasoning 2023*  
[NeSy 2023](#) (Accepted for spotlight presentation)
- 2022 **Sagar Malhotra** and Luciano Serafini  
 On Projectivity in Markov Logic Networks  
*International Workshop on Probabilistic Logic Programming 2022*  
[PLP 2022](#)
- 2021 **Sagar Malhotra** and Luciano Serafini. Weighted Model Counting in  $\text{FO}^2$  with Cardinality Constraints and Counting Quantifiers: A Closed Form Formula  
*International Workshop on Statistical Relational AI, IJCLR 2021.*  
[StarAI, IJCLR 2021](#)