

# Sagar Malhotra

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url: [countinglogic.github.io](https://countinglogic.github.io)

Born: May 6, 1994  
Nationality: Indian

## Current position

11.2019-01.2023 PhD Candidate  
Advisor: Luciano Serafini  
University of Trento, Italy  
Fondazione Bruno Kessler, Italy

## Research Experience and Education

2018-2019 Junior Research Fellow  
Advisors: Luciano Serafini, Radim Nedbal  
Project: Variational Inference in Hybrid Domains  
Data and Knowledge Management Unit  
Fondazione Bruno Kessler, Italy

2018 MSc in Physics  
Advisors: Roberto Iuppa (Unitn), Marco Cristoforetti (FBK)  
Thesis: Deep Learning For Track Reconstruction in Next Generation HEP Experiments  
Fondazione Bruno Kessler, Italy  
University of Trento, Italy

2015 BSc in Physics with Honors  
University of Delhi, India

## Conference Publications

2022 **Sagar Malhotra** and Luciano Serafini. Weighted Model Counting in  $FO^2$  with Cardinality Constraints and Counting Quantifiers: A Closed Form Formula  
(Accepted for Oral presentation) *Proceedings of the 36<sup>th</sup> AAAI Conference on Artificial Intelligence*.  
[arXiv:2110.05992](https://arxiv.org/abs/2110.05992)

- 2021 **Sagar Malhotra** and Luciano Serafini. A Combinatorial Approach to Weighted Model Counting in the Two Variable Fragment with Cardinality Constraints  
*Proceedings of the 20<sup>th</sup> International Conference of the Italian Association for Artificial Intelligence, 2021*

## Workshop Publications

- 2021 **Sagar Malhotra** and Luciano Serafini. Weighted Model Counting in  $FO^2$  with Cardinality Constraints and Counting Quantifiers: A Closed Form Formula  
*10<sup>th</sup> International Workshop on Statistical Relational AI, 2021*

## Submitted Papers and Preprints

- 2022 **Sagar Malhotra** and Luciano Serafini. On Projectivity in Markov Logic Networks  
*Under Review*. [arXiv:2204.04009](https://arxiv.org/abs/2204.04009)

## Talks

- 2022 On Projectivity in Markov Logic Networks, DKM Group Seminar  
2022 Weighted First-Order Model Counting, AAAI 2022@FBK Workshop

## Awards and Achievements

- 2018 Bronze medal in TrackML particle tracking challenge on Kaggle.  
2017 Part of the winning team in Industrial Problem Solving using Physics  
2017 Awarded fully funded trip to Innovation Days-Innsbruck in StartUp Lab, Trento  
2016 Awarded full-Scholarship for the Joint Masters in Theoretical Physics at University of Trento and SISSA- Trieste (Declined)  
2016 Awarded Opera Universitaria Scholarship for Masters in Physics at University of Trento  
2016 Amongst top 5% candidates in the Joint Entrance Screening Test- Physics 2016 among ~ 5000 candidates  
2016 Amongst top 5 % candidates in IIT Joint Admission Test for Masters in Physics 2016 among ~ 10000 candidates