
Preface to the 2nd Edition

The field of Probabilistic Logic Programming is rapidly growing and much has happened since the first edition of this book in 2018. This new edition aims at reporting the most exciting novelties since 2018.

The semantics for hybrid programs with function symbols was placed on a sound footing and this is presented in Chapter 5.

Probabilistic Answer Set Programming gained a lot of interest and a whole chapter is now devoted to it (Chapter 6). Several works have started to appear on the complexity of inference in PLP and PASP and they are now surveyed in Chapter 7.

Algorithms specifically devoted to solving the MPE and MAP tasks are described in Section 8.9.

Inference for hybrid programs has changed dramatically with the introduction of Weighted Model Integration (see Section 12.2) so that the whole set of inference approaches for hybrid programs is now collected in their own Chapter 12.

With respect to learning, the first approaches for neuro-symbolic integration have appeared (DeeProbLog, see Section 13.7) together with algorithms for structure learning hybrid programs (DiceML, see Section 14.6).

Moreover, given the cost of learning PLPs, various works proposed language restrictions to speed up learning and improve its scaling: LIFTCOVER, see Section 14.7.1, and SLEAHP, see Section 14.7.2.

Finally, this 2nd edition gave me the opportunity to fix various errors and imprecisions that were unfortunately present in the 1st edition.