

Neuro-symbolic artificial intelligence : the state of the art

Titre(s): Neuro-symbolic artificial intelligence : the state of the art / Pascal Hitzler ; Md Kamruzzaman Sarker

Editeur, producteur : IOS Press, 2022

Adresse bibliographique : : IOS Press, 2022

Description matérielle : 395 p. : 24 cm

Résumé ou extrait : Neuro-symbolic AI is an emerging subfield of Artificial Intelligence that brings together two hitherto distinct approaches. "Neuro" refers to the artificial neural networks prominent in machine learning, "symbolic" refers to algorithmic processing on the level of meaningful symbols, prominent in knowledge representation. In the past, these two fields of AI have been largely separate, with very little crossover, but the so-called "third wave" of AI is now bringing them together. This book, Neuro-Symbolic Artificial Intelligence: The State of the Art, provides an overview of this development in AI. The two approaches differ significantly in terms of their strengths and weaknesses and, from a cognitive-science perspective, there is a question as to how a neural system can perform symbol manipulation, and how the representational differences between these two approaches can be bridged. The book presents 17 overview papers, all by authors who have made significant contributions in the past few years and starting with a historic overview first seen in 2016. With just seven months elapsed from invitation to authors to final copy, the book is as up-to-date as a published overview of this subject can be. Based on the editors' own desire to understand the current state of the art, this book reflects the breadth and depth of the latest developments in neuro-symbolic AI, and will be of interest to students, researchers, and all those working in the field of Artificial Intelligence