

INSTITUTSSEMINAR

Am Dienstag, dem 19. November 2024, spricht um 12:30 Uhr im Raum Z 2073

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zum Thema:

"Knowledge Compilation, Rectangles and Lower Bounds".

Abstract:

A fundamental concept in computer science is that of a Boolean function; functions from $\{0,1\}^k \rightarrow \{0,1\}$. Storing Boolean functions naively requires exponential space, making succinct representations critical in applications like artificial intelligence and SAT solving. Knowledge compilation studies such representations, aiming to map out the trade-off between size and utility of using different representation formats. To carry out this mapping, it is necessary to show that some Boolean functions require large representations in specific formats. In this talk, we focus on one powerful method for proving such results, which leverages concepts from communication complexity. The talk will build up to discussing a recent result showing that structured d-DNNF does not support polynomial time negation [1]. Along the way, we highlight the current state of the 'knowledge compilation map' as well as directions for future research.

[1] "Structured d-DNNF is Not Closed Under Negation" [IJCAI, 2024].

Alle Interessierten sind herzlich eingeladen.