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Authors

Authors and affiliations

Hendrik Blockeel

Reference work entry

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Definition

The *hypothesis space* used by a machine learning system is the set of all hypotheses that might possibly be returned by it. It is typically defined by a [Hypothesis Language](#), possibly in conjunction with a [Language Bias](#).

Motivation and Background

Many machine learning algorithms rely on some kind of search procedure: given a set of observations and a space of all possible hypotheses that might be considered (the “hypothesis space”), they look in this space for those hypotheses that best fit the data (or are optimal with respect to some other quality criterion).

To describe the context of a learning system in more detail, we introduce the following terminology. The key terms have separate entries in this encyclopedia, and we refer to those entries for more detailed definitions.

A learner takes observations as inputs. The [Observation Language](#) is the language used to describe these observations.

The hypotheses that a learner may produce, will be formulated in...

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Recommended Reading

De Raedt, L. (1992). *Interactive theory revision: An inductive logic programming approach*. London: Academic Press.
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Nédellec, C., Adé, H., Bergadano, F., & Tausend, B. (1996). Declarative bias in ILP. In L. De Raedt (Ed.), *Advances in inductive logic programming. Frontiers in artificial intelligence and applications* (Vol. 32, pp. 82–103). Amsterdam: IOS Press.
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