Baliga, Ganesh; Case, John; Jain, Sanjay
Language learning with some negative information. (English) Zbl 0831.68084

Summary: Gold-style language learning is a formal theory of learning from examples by algorithmic devices called learning machines. Originally motivated by child language learning, it features the algorithmic synthesis (in the limit) of grammars for formal languages from information about those languages. In traditional Gold-style language learning, learning machines are not provided with negative information, i.e., information about the complements of the input languages. We investigate two approaches to providing small amounts of negative information and demonstrate in each case a strong resulting increase in learning power. Finally, we show that small packets of negative information also lead to increased speed of learning. This result agrees with a psycholinguistic hypothesis of McNeil correlating the availability of parental expansions with the speed of child language development.

MSC:
68T05 Learning and adaptive systems in artificial intelligence
68Q45 Formal languages and automata

Keywords:
gold-style language learning; learning machines

Full Text: DOI Link