Mimicking Behaviors in Separated Domains (Abstract Reprint)

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Abstract Reprint. This is an abstract reprint of a journal article by Giacomo, Fried, Patrizi, and Zhu (2023).

Abstract

Devising a strategy to make a system mimic behaviors from another system is a problem that naturally arises in many areas of Computer Science. In this work, we interpret this problem in the context of intelligent agents, from the perspective of LTLf, a formalism commonly used in AI for expressing finite-trace properties. Our model consists of two separated dynamic domains, D_A and D_B, and an LTLf specification that formalizes the notion of mimicking by mapping properties on behaviors (traces) of D_A into properties on behaviors of D_B. The goal is to synthesize a strategy that step-by-step maps every behavior of D_A into a behavior of D_B so that the specification is met. We consider several forms of mapping specifications, ranging from simple ones to full LTLf, and for each, we study synthesis algorithms and computational properties.

References

Giacomo, G. D.; Fried, D.; Patrizi, F.; and Zhu, S. 2023. Mimicking Behaviors in Separated Domains. *Journal of Artificial Intelligence Research*, 77: 1087–1112.