Coalgebraic Learning

Alexandra Silva

Programming Principles, Logic and Verification Group, University College London, London, U.K.

Abstract

The area of automata learning was pioneered by Angluin in the 80’s [1]. Her original algorithm, which applied to regular languages and deterministic automata, has been extended to various types of automata and used in software and hardware verification. In this talk, we will take an abstract perspective at automata learning. We show how the correctness of the original algorithm and many extensions can be captured in one proof using coalgebraic techniques. We also show that a novel algorithm for nominal automata can be derived from the abstract framework.

1998 ACM Subject Classification F.1.1 Models of Computation, F.3.1 Specifying and Verifying and Reasoning about Programs, F.3.2 Semantics of Programming Languages

Keywords and phrases Automata learning, coalgebraic techniques

Digital Object Identifier 10.4230/LIPIcs.CSL.2016.5

Category Invited Talk

References