Model Checking
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Lecture – 53
Summary

This brings us to the end of unit 11 on binary decision diagrams.

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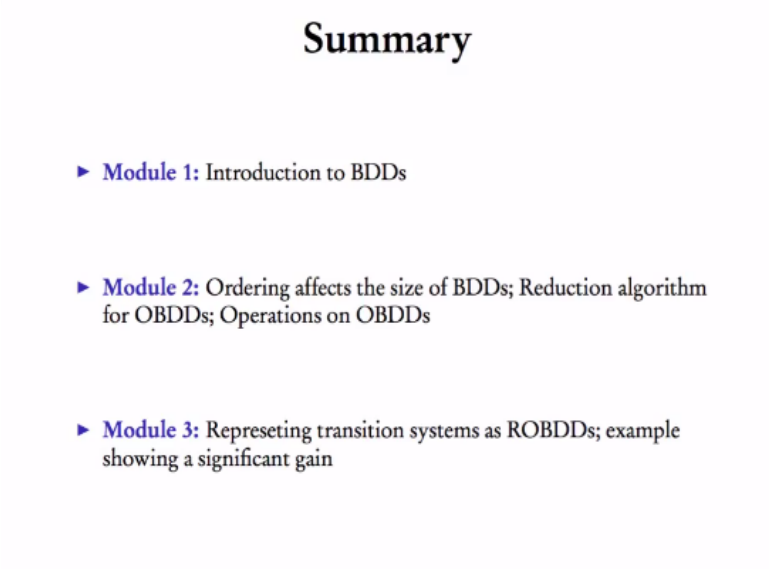

So, we saw an introduction to BDDs in the first module. Our entire goal is to be able to represent Boolean functions in a succinct way. We saw some rules to reduce BDDs in module 1 itself. In module 2, we saw that a change in the ordering affects the size of BDDs. So these BDDs are called ordered BDDs, if the order of occurrence of variables is preserved in every path.

For instance, if there is a path in which you see x before you see y, there is every path if at all you see both x and y, that x should come before y, that is what is ordered BDD and we saw that if we change the ordering, the size of BDDs are possibly different. We then saw a reduction algorithm for OBDDs, we also saw an apply algorithm for OBDDs which can be used to compute union dot and knot.

In module 3, we saw how we can encode a transition system as an ROBDD. The entire transition system can be seen as an ROBDD and we saw an example which gives us a significant game if we represent the system as an ROBDD. CTL and model-checking

algorithms can be efficiently implemented over ROBDDs. See you again with a different set of lectures.