

Title

CS1950Y: Verifying AODV with Spin

Abstract

For this project, I worked with McKenna Cisler and David Boles on modeling the Ad Hoc On-Demand Distance Vector (AODV) routing protocol. This protocol is used for routing between mobile nodes in a network and among other features, it is able to find routes when needed and adapt to changes in graph topology (e.g. links between devices going down unexpectedly). Our goal was to verify that this protocol worked according to its specifications. We coded an implementation of this protocol using Promela, which allowed us to represent nodes in the network as concurrent processes. Further, we were able to verify LTL (Linear Temporal Logic) properties about this protocol by using Spin to run our implementation. These properties included that routes were always found if possible and that after links between nodes went down, route discovery would still work correctly.

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