

Reinforcement Learning based Efficient Routing for Wireless Mesh Network

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Abstract— Wireless mesh networks are a promising technology for offering ubiquitous Internet connectivity. These multi-hop wireless access networks consist of fixed and mobile nodes, which help each other relaying packets toward Internet gateways and back. This Synopsis addresses the problem of multipath routing in wireless mesh networks. We study the use of clustering algorithms to facilitate the discovery and deployment of non-interfering multipath routes in these settings. In this context we propose a novel clustering based intelligent reinforcement learning algorithm based on Markov decision process to discover and maintain routes in an efficient manner and when a mesh node should have to sleep or awake depends upon involvement of mesh node in routing, aiming at minimizing interferences between transmissions of neighbouring nodes. The work offers an interesting trade-off between the signalling costs, the time required to set up and maintain paths, and the properties of the discovered paths.

Keywords —Wireless Mesh Network, Reinforcement Learning, Markov Decision Process.