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Reputation System for User-Generated Opportunistic Podcasting

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Abstract:

User-generated podcasting service over human-centric opportunistic network can facilitate user-generated content sharing while humans are on the move beyond the coverage of infrastructure networks. We focus on the aspects of designing efficient forwarding and cache replacement schemes of such service under the constraints of limited capability of handheld device and limited network capacity. In particular, the design of those schemes is challenged by the lack of podcast channel popularity information at each node which is crucial for forwarding and caching decisions. We design a distributed reputation system based on modified Bayesian framework that enable each node estimates the channel popularity in a efficient way. It estimates channel popularity by not only first hand observations but also second hand observations from other nodes. Our simulation result shows reputation system can always well estimate most popular, intermediate and low popular channels, compare to history-based rank scheme which can only well estimate a few most popular channels. Reputation system significantly outperforms history-based rank when the public cache size is small or “a” parameter of Zipf-like distribution is small.

Host: Yongluan Zhou