
Pervasive Domination

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Abstract

Inspired by the implicit or explicit persuasion scenario, which characterizes social media platforms, we analyze a novel domination problem named Pervasive Domination. We consider a social network modeled by a digraph $G=(V,E)$ where an arc (u,v) in E represents the capability of an individual u to persuade an individual v . We are looking for a set S subset V of social change individuals, of minimum cost, who combined enable to reach the desired behavior. The impact of S is measured by a set function $f(S)$. We show that the natural greedy algorithm provides an approximation guarantee, $(\ln \frac{p-f(\text{emptyset})}{p-f(S)} + \beta) + 2$ where $\beta > 0$ represents the minimum gain on the function f .

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