Block Contagions in Social Networks using Dominating Sets

(Technical Report)

Opposition to Anti-Pandemic Measures in Florida, 2020 - 2022

(STS Research Paper)

An Undergraduate Thesis Portfolio
Presented to the Faculty of the
School of Engineering and Applied Science
In Partial Fulfillment of the Requirements for the Degree
Bachelor of Science in Computer Science

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May 8, 2023

Preface

Biological and social contagions interact, often in mutually reinforcing ways. Effective control of such contagions depends upon immunology, public policy, and social trust.

Contagions—such as viruses and misinformation—can be dangerous. With nodes from dominating sets, contagions in social networks can be blocked. In the proposed method, a Python program produces a prioritized list of dominating nodes. “Inoculating” these nodes can reduce contagion spread by up to 40 percent. Blocking results are compared favorably with those yielded by the high degree heuristic (HDH), a common standard in blocking studies. The proposed method may help researchers and policymakers combat harmful contagions. Researchers should seek ways to improve the speed of the algorithm, so it can be applied to large social networks.

How did interest groups in Florida that opposed strict anti-pandemic measures succeed in 2020 - 2022? Since early 2020, the COVID-19 pandemic has caused not only significant economic stress but also social conflicts. In Florida as in other states, many interest groups opposed anti-pandemic measures; most invoked personal freedom as a basis for their opposition. To succeed, such groups use mass media, litigation, popular appeals, and political influence. This study may help researchers and policymakers develop means of preventing and mitigating opposition to necessary public health measures.