2016 Summer Undergraduate Research Experience Project Showcase

University of California, Santa Barbara

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News Bias in Online News

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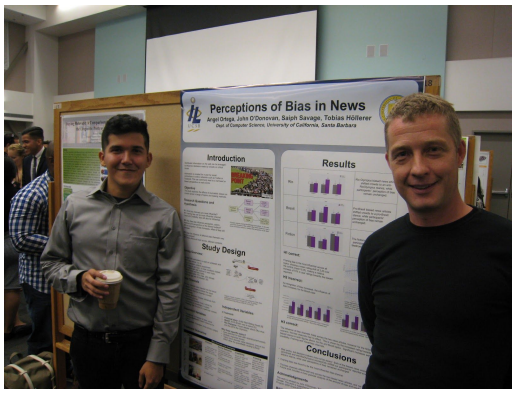

With recent developments in technology, distributed information on the web can be leveraged to influence decisions made by crowds on critical issues. This leverage is strengthened by the 'filter bubble' effect where information is curated for a user by social connections in online networks such as Twitter or Facebook, commonly leading to a narrowed or biased perspective on real events. This study explores the effects of journalistic biases on crowds across a range of topics and biasing methods. In particular, we conducted a 5 by 3 between subjects experiment where we varied topics and bias types. We surveyed 300 crowd workers from Amazon Mechanical Turk to quantify three measures: (1) a crowd's perception of news article bias, (2) a crowd's tolerance for action against an issue, and (3) a crowd's evaluation of an article's key subject before and after reading a biased news article. Five separate methods for adding bias were evaluated, and a unique set of news articles were chosen that met typographical criteria for these bias types. Specifically, the issues we chose were the 'Brexit' vote in Britain, the 2016 Rio Olympics, and a popular fiction scenario as a control. Each scenario had dichotomous stances on the key issue, for example, anti-Rio-Olympics or pro-Brexit. Our results show that in the Brexit case, when presented with pro-Brexit biased news articles and a control, crowds were shifted to a pro-Brexit stance, while participants' perception of bias remained unchanged.

Computational Complexity of Solving Network Dynamics

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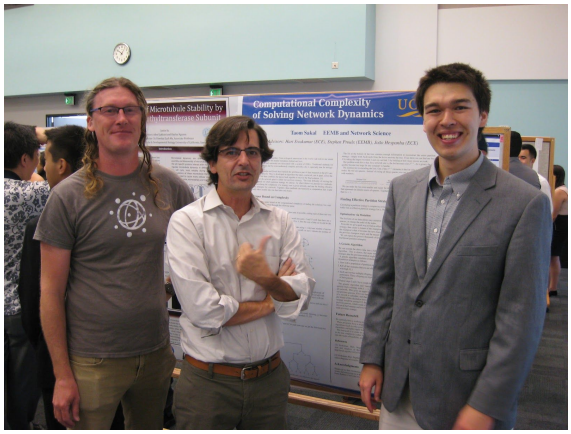

The dynamics of many networks are described by a system of equations. Traditional methods for solving these systems do not work for more complex networks. Instead we can solve them by cutting the network apart via a *partition strategy*, solving the sub-systems, and then combining the pieces back together. The total difficulty of solving the system depends on which partition strategy we choose.

We present two algorithms: one for calculating the complexity of a strategy over a given network, and one for finding effective partition strategies for a network. Together, these algorithms can transform a computation that would normally takes months into one that takes only hours.