

#### Inputs:

Diversity: The diversity in interests in the social network. Corresponds to how likely a person is to be interested in a friend's post.

Uniqueness: The likelihood that a person will create a new post instead of browsing their newsfeed for content shared by their friends. This model assumes that a person won't post new content and also re-share content in their feed in the same iteration. The probability that a person just won't see a post in their feed due to other unique content in their feed is incorporated into this.

Reshare Rate: The probability that someone will re-share content that interests them.

Sharing Mode: The simulation has two options: 1 sharer and multi-sharer mode. "1-sharer" means that only one person node can be selected as an original sharer of the content as it spreads through the network. "Multi-sharer" means that multiple people can share the same original content to observe how it spreads through the network in this way.

Start Node: The original person that shares the node. This may be one or multiple depending on the sharing mode. To select start node(s) click a vertex on the graph. When in sharing mode multiple vertices may be selected. Vertices can also be removed from the list of start nodes by clicking the node again.

Step-by-step Iterations: This option causes the simulation to pause through each level iteration of the simulation. So, for example, after the original sharer has shared the post, the simulation will pause after the post has been in the feeds of the original sharers friends. It will pause again after all of the friends of the original sharers friends have seen or had the option to see the node.

#### Outputs:

Clicking the "Download data" button allows the user to download a CSV file of the data of the simulation.

Total Unseen Count: Any person who didn't see the original post for whatever reason, whether it just never reached their feed or it was in their feed and they didn't see it.

Unseen Count within Friend Network: This is a subset of the total unseen count. This represents the people that had the post in question in their newsfeed but didn't see it because they posted new content or didn't see it because of other content in their feeds.

Uninterested Count: The number of nodes who saw the post but were not interested. The model has a bias towards low uninterested counts. If a person sees a post multiple times, through multiple people in her friend network sharing the post, they will have a new opportunity to be interested in the post. This corresponds to the fact that people may be more interested or curious in a post after seeing it multiple times.

Interested Count: The number of people who saw the post, were interested in it, but decided to not reshare it. This model assumes that if a person is interested in a post and does not reshare it, they will not reshare it in the future.

Reshare Count: The number of people who decided to reshare the post.

Most Significant Person: The person who generated the most interest through a post. A person gets a “point” for each friend that is interested in their post, whether it’s reshared or not. At the end of the simulation, the node in the network with the highest number of points is the most “significant.”

Twitter vs. Facebook

Facebook uses a default network because of API limitations.

Twitter allows users to play with a smaller version of their own Twitter network to predict how a post might spread among their followers. The Twitter simulation is also not completely indicative of how the actual network functions. Our model assumes that anyone a person follows also follows you. This might not be the case in the actual network.