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Thesis Defense Information

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Abstract: Shown below

Rumor Propagation on Random and Small World Networks

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Various models of rumor transmission on social networks are introduced, including the Maki-Thompson and Daley-Kendall models. The different patterns of rumor flow are compared using the constructs of both a Random Social Network and a Small World Social Network.

Interesting comparisons have been made about the networks' clustering coefficients, centrality measures and average path lengths, as well as the patterns of the rumor flow through the network. Significant correlations to consider are those between transmission rates vs. time, connectivity vs. average path length, and connectivity vs. clustering coefficient. It will be shown that a rumor will flow through a small world network faster than in a random network.

The simplest model of rumor transmission will compare the amount of time it takes for the rumor to flow completely through a network, while the Maki-Thompson and Daley-Kendall models display the amount of time it takes for a rumor to cease to exist within a network. Such models can help us to understand different social networks and the communication among its members. This can then be applied to political networks and terrorist cells in order to predict the future patterns of information flow within these distinct groups.