## Keep Your Friends Close and Your Facebook Friends Closer:

A Multiplex Network Approach to the Analysis of Offline and Online Social Ties Desislava Hristova*, Mirco Musolesi**, Cecilia Mascolo* *University of Cambridge, **University of Birmingham



## Take-aways

Strong social ties are characterized by maximal use of communication channels. Weak social ties are characterized by minimal use of communication channels.
A multiplex network approach helps analyze social ties and their strength. Similarity between pairs is greater at a shorter distance in the multiplex network Online social circles can provide greater diversity of information in politics and music.
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- Graph Aggregations —— Similarity \& Distance

Situational Factors



$$
m w_{i j}=\sum_{\alpha=1}^{M} \frac{a_{i j}^{\alpha}}{M}
$$

Multiplex distance: the shortest path distance between two nodes are weighted by their multiplexity
$\qquad$




