Researchers at MIT have developed a robust algorithm, “TidalTrust,” for calculating a meaningful rating for a given item for a particular based on a trust analysis of his social graph (Katz et al.). The authors created a complex set of logical axioms from which they derived an intuitive formula for traversing a graph and constructing a weighted average of ratings for the objects of interest. For example, consider a user Bob and a graph which represents Bob’s social network. If Bob wants to determine how highly his friends rate a particular item, e.g. a movie or a book, we can apply the TidalTrust algorithm to Bob’s friend graph. TidalTrust does a modified breadth-first search of the graph by checking each of Bob’s friends. If a particular friend rated the item in question, then the algorithm will ­incorporate that rating weighted by the level of trust between Bob and the friend. If the friend has yet to rate the item, then his contribution to the average is represented by a sum of the friend’s friends again weighted by the trust between the source, Bob, and the second layer in the graph. The algorithm continues in this fashion until it reaches a maximum depth in the graph at which point it terminates. TidalTrust produces provably better results in accurately evaluating item ratings from a social graph than other published algorithms that achieve the same end.

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