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Averting Collusion in Reciprocal Rating Systems

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Abstract

Design/Methodology/Approach: This paper develops a novel algorithm for the scoring of students' peer review process and simulates the algorithm using two different group sizes to establish the efficacy of the algorithm.

Purpose: Reciprocal rating is often used to measure individual performance within corporate entities, or in peer-review of students' performances in group assignments. Intentional distortion of assessment can be achieved in such scenarios through careful contracting between participants. The algorithm proposed in this paper ensures that no contract can be agreeable to two rational participants in a two-way rating system.

Findings: The algorithm presented in this paper shows that if this modified score function is used to award marks to the students after the peer-review exercise, there is no rational incentive for any two students to collude and give each other high peer-review marks.

Research limitations: This algorithm is not yet tested in a real classroom environment and collusion between more than two subjects is kept as a matter of future research.

Originality: Although numerous research works have been carried out to prevent collusion between students during a peer-review process, none of the existing methods are strategy-proof. This algorithm provides a strategy-proof method of preventing coalition between students in a peer-review exercise.

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