

Title: A Semi-Automatic Framework for the Design of Rational Resilient Collaborative Systems
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Abstract

Collaborative systems (e.g., P2P file sharing, live streaming applications) are the largest traffic source of today's Internet. However, these systems suffer from rational users that decide to be cooperative or selfish case by case, depending on the behaviour which yields the highest utility. In this context, we propose RACOON, a novel semi-automatic framework for rational resilient collaborative system design. RACOON achieves this objective by relying on classical techniques: an extensible model to specify the collaborative system, reputation as incentive mechanism to reward cooperation and sanction rational users, a game theoretic analysis to predict the behaviour of rational users, and a simulation tool for the performance-oriented tuning of the system.

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