**Optimized Escape Maneuver for the Target-Attacker Problem**

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**Abstract:** We present a new game-based methodology to find the optimal escape maneuver for a target against an attacking missile. The missile tracks the target according to the 2D guidance law of proportional navigation, and employs polynomial or trapezoidal evasion. The cost function used maximizes both the missile acceleration and the miss distance. Optimization is achieved via the techniques of Mont-Carlo simulation and genetic algorithms. We utilize a contribution of human intelligence by constructing a mathematically-correct game of target-attacker and letting many people play it. We find the best escape maneuver by collecting and analyzing data of the human escape maneuver. The game is based on the same guidance law which controls the missile behavior. The player controls the target, trying to evade the missile. The game was developed using Unity, a free readily-available cross-platform game engine. The preliminary results obtained are encouraging and promising.