Designing a Competitive Point System for Among Us

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Among Us is a 4-15 player social deduction game in which players on a spaceship are secretly assigned the roles of Crewmates or Impostors. Crewmates work collaboratively to complete tasks and identify Impostors, while Impostors aim to eliminate Crewmates without being detected. Since players share a team-based outcome (a win or a loss), all members of a team are credited equally regardless of individual contribution, making it difficult to determine which players on either team had the best performance. As a result, Among Us functions primarily as a social game rather than a competitive one. This project explores how Among Us could be transformed into a competitive experience by developing an algorithm that ranks players based on gameplay performance statistics. To track such data, the game would require a system capable of recording player actions. Since the original Among Us source code is not publicly available, the Among Us game was recreated from scratch with a custom statistics-tracking system using the Godot game engine. A multi-agent simulation was added to automate the generation of large amounts of Among Us gameplay data. This data was used to design a scoring algorithm that rewards actions correlated with team success and penalizes actions that reduce a team's chances of winning. Using principles from game theory, the scoring system also addresses edge cases that could encourage unintended, undesirable strategies. Simulation results were used to iteratively adjust the scoring system to ensure balanced rewards across roles and gameplay tasks. The results show that a casual social deduction game such as Among Us can engage players in more objectively measured competitive environments through the introduction of a point system based on player performance.

Awards Won:

Association for the Advancement of Artificial Intelligence: Honorable Mention (do not read aloud). Winners receive a student level membership. Information is included separately in the SAO Portal.