

Social Interactions in Online Games

Background

The games industry is currently worth about \$100 billion per year, making it one of the largest entertainment industries in the world. Some of the most successful games of recent years are online multiplayer games where teams of players can compete against each other. There is a rapidly growing scene of eSports, with professional competitions in multiplayer online battle arena (MOBA) games such as DOTA and League of Legends as well as multi-player shooter games such as CounterStrike and Team Fortress

Each time an online match takes place, the game publishers record detailed behavioral information about the matches as well as the second-by-second behavior of the players taking part. This data provides a wealth of information which can be used to better understand how the game is played and what the experience of a player is like. For example, useful knowledge about player engagement or the progression of player skill can be extracted.

Project

The aim of this project is to look at this data from the perspective of a network of interactions. This is a heavily under-explored area in game analytics and game design, mainly due to the lack of network analysis expertise in the game industry. Each match creates a network of links between players who play with and against each other. One of the most interesting and important questions is what is the influence of a particular or group of players? Does playing with or against them increase engagement or enjoyment. Can players increase their skill levels more quickly in particular groups or should they play with a varied group? The potential for the game industry is substantial. Social connections have proven powerful drivers of engagement in multi-player games, and yet they are not well understood and there are no good tools for analyzing social networks in games, nor for monitoring their impact on behavior. The potential for game design and social applications in general, is therefore substantial.

In this project you will use publicly available databases, or possibly special arrangements with the game publisher if available, to construct large networks of players from multi-player competitive games. You will then devise state-of-the-art algorithms for analyzing the data and extracting information from these huge datasets with the goal of answering some of these questions. The aims are

- Extract data from several game publisher databases, either through the public APIs or through private arrangements.
- Construct suitable network descriptions of the data.
- Connect the structure of the interaction network to specific in-game effects such as engagement and skill progression as well as behavioral telemetry.
- Build predictive models to show how these effects can be enhanced by adjusting the social aspects of the games, and how game developers can use networks to identify players who are central to the formation and stability of social networks in games.