

# SPIRE-EIT|2022

Summer Program for Interdisciplinary Research and Education – Emerging Interface Technologies (SPIRE-EIT)

## COOPERATIVE GAMING

**Project Title:** Studying Team Metrics in Cooperative Gaming Environments

**Short Title:** Cooperative Gaming

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Gamification features are being adapted in a variety of fields, including collaborative learning, computer supported cooperative work, and team training in gamified simulations. Previous research investigated cooperative game features, such as interdependencies, shared goals, and complementary abilities to better understand the factors that drive players' social behaviors. Additionally, a variety of gamified testbeds were developed to test teamwork aspects, such as communication and leadership.

The focus of this project is to study and assess team metrics in cooperative game environments through two main research activities. First, the team will analyze existing cooperative video games by annotating game play sessions, following a codebook of team behavioral markers and cooperative game mechanics and dynamics. The purpose of this analysis is to find correlations between cooperative features and teaming behaviors, and thus generate a list of requirements for developing gamified teaming environments. Second, the team will develop a game-based testbed, where teaming behaviors can be generated and evaluated, by applying cooperative games' design concepts. This part of the project requires a direct application of what we have learned from the games' analysis, in addition to a clear understanding of the existing theoretical background of team research. Currently, an original game prototype is under development. The main tasks throughout summer will be annotating game play sessions to develop requirements, iterating the game prototype design to better generate team behaviors, running experiments with teams and assessing the game's ability to generate and measure teaming behaviors.