

# Cooperative Strategies in Multi-Agent Systems

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# Outline

The Problem

The Mechanism

The Aims and Objectives

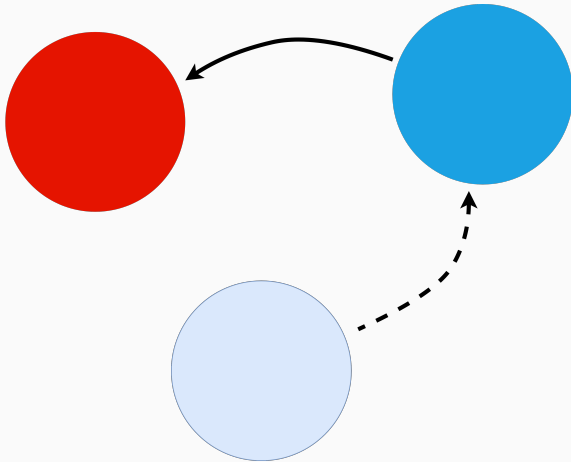
The Implementation

The Future

“Survival of the fittest.”

- Herbert Spencer in The principles of biology

# The Mechanism



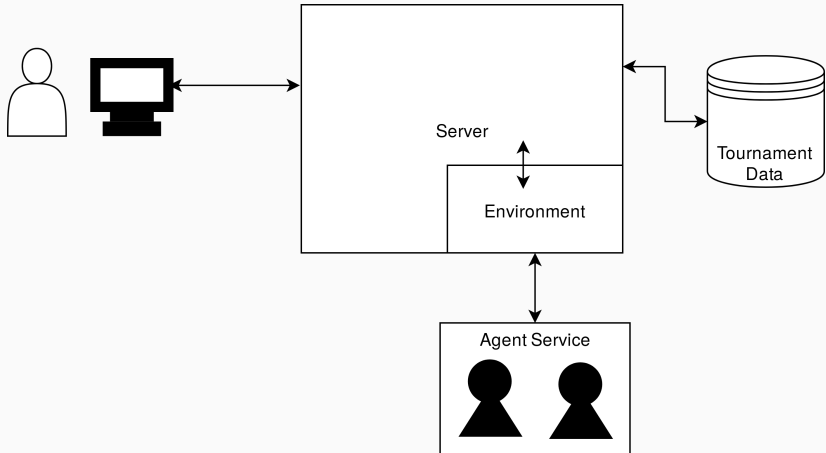
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<sup>0</sup>Taken from Nowak and Sigmund 1998 [1]

# The Aims and Objectives

- Explore the mechanism of indirect reciprocity's relevance to multi-agent systems
- Explore different strategies success in the game
- Explore different trust models for agents in a multi-agent system
- Explore how social ability can affect the evolution of cooperation in a system

# The Implementation



# The Future

- Improving the environment class structure and testing
- Post-tournament analysis
- Front-end for an indirect reciprocity game
- Expanding the API
- Developing more agent strategies
- Improving agent proactivity
- Making the web application design fit for education (enhanced GUI + content)
- Development of a learning agent



Martin A. Nowak and Karl Sigmund.

**Evolution of indirect reciprocity by image scoring.**

*Nature*, 393:573–577, 1998.