

The complexity of learning in artificial intelligent systems: the role of cooperation between intelligent agents operating a bus line

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Interaction between intelligent agents is an increasingly important issue due to the rise of self-driving vehicles and the race for smart public transportation. Understanding the underlying dynamics of these interactions is a crucial part to design optimized and reliable architectures for AI control. We present a systematic analysis of a bus line where, in contrast to what game theory suggests, a cooperative behavior emerges due to co-evolution during the learning phase. The cooperative regime is proven to reduce waiting time and optimize the use of resources. We also test the robustness of this conduct and show that there exist regimes in which competition among agents takes place with detrimental effects. In the last part, the applicability of these ideas in the case of a university's shuttle bus system is discussed.