

Title: From centralized to distributed topologies through vision-based multirobot control

Abstract: This talk will present an overview of our results obtained recently in the topic of vision-based control of multirobot systems. In order to fulfill the task of controlling a set of robots to a desired formation, we propose a vision-based framework relying on the homographies induced by the robots to define the system interactions. We address this task with different proposals that go from purely centralized topologies to distributed passing through hybrid topologies, which aim to combine the optimality and simplicity of centralized approaches with the scalability and robustness of distributed strategies. Here, vision is not only used by the team of robots for perception and defining the system topology but it is also highly involved in the control system design, consisting in purely image-based control laws.