

Title:

Coordination of multi-robot systems with bearing measurements

Presenter:

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Abstract:

Formation control is one of the canonical problems in the study of multi-robot coordination. In many formation control problems, implicit assumptions are made on the information available to each robot to achieve the desired objective. For example, distance-based formation control solutions assume the availability of inter-robot distance measurements and also relative positions measurements. Furthermore, many of these strategies also assume a bi-directional sensing and communication architecture. In this talk, we present a bearing-based extension to the existing works and formation control. Similar to distance-based methods, we utilize an adapted notion of rigidity theory to describe formations and derive corresponding control laws. We then show how this framework can be extended to handle directed sensing and communication networks. A discussion on future directions and challenges will then follow.