

Instrumented Sensor System – Practice

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Abstract

In previous work, we introduced the notion of Instrumented Logical Sensor Systems (ILSS) that are derived from a modeling and design methodology [2, 4]. The instrumented sensor approach is based on a sensori-computational model which defines the components of the sensor system in terms of their functionality, accuracy, robustness and efficiency. This approach provides a uniform specification language to define sensor systems as a composition of smaller, predefined components. From a software engineering standpoint, this addresses the issues of modularity, reusability, and reliability for building complex multisensor systems.

In this report, we demonstrate the practicality of this approach and discuss several design and implementation aspects in the context of mobile robot applications.