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Book Chapter

Service-Oriented Software Architecture for Cloud Robotics

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Abstract

In this article, we present an overview of the use of service-oriented architecture and Web services in developing robotics applications and software integrated with the Internet and the Cloud. This is a recent trend that emerged since 2010 from the concept of cloud robotics, which leverages the use of cloud infrastructures for robotics applications following a service-oriented architecture approach. In particular, we distinguish two main categories: (\textit{i.}) virtualization of robotics systems and (\textit{ii.}) computation offloading from robots to cloud-based services. We discuss the main approaches proposed in the literature to design robotics systems through the Web and their integration to the cloud through a service-oriented computing framework.