RobotShare: a Framework for Robot Knowledge Sharing

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Abstract

Knowledge representation is a traditional field in artificial intelligence. Researchers have developed various ways to represent and share information among intelligent agents. Agents that share resources, data, information, and knowledge perform better than agents working alone. However, previous research also reveals that sharing knowledge among a large number of entities in an open environment is a problem yet to be solved. Intelligent robots are designed and produced by different manufactures. They have various physical attributes, use different knowledge representations and have different needs. In this research, we pose robot knowledge sharing as an activity to be developed in an open environment - the World Wide Web. Just as search engines like Google provide enormous power for information exchange and sharing for humans, we believe a searching mechanism designed for intelligent agents can provide a robust approach for sharing knowledge among robots. We have developed knowledge representation for robots that allows Internet access and a knowledge organization and search indexing engine that performs knowledge retrieval.