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一种意向驱动式面向agent程序设计语言

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Abstract

An agent-oriented programming language with intention driver is proposed, which is called AOPLID. Based on open situation calculus, AOPLID can be regarded as an improvement of GOLOG that is based on situation calculus. AOPLID can formalize some elements of the agent's mental state, namely belief, intention, capability and strategy. A belief revision operator is introduced in AOPLID to deal with the communication and exogenous events. AOPLID solves the problems GOLOG faces, such as inconvenience of describing the agent's mental state, lack of communication. The syntax of the AOPLID and its semantic under the OSC are presented. An example program of AOPLID that describes the coffee machine is given too.

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摘要

提出了一种意向驱动式面向agent程序设计语言——AOPLID(agent-oriented programming language with intention driver).该语言基于开放式情景演算OSC(open situation calculus),吸收了GOLOG的合理成分,加入对信念、意向、能力、策略等agent心智成分的处理,使用信念修正原语处理通信交互以及事件响应等外因行动,并采用了一种新颖的离线规划和在线执行相结合的运行方式,从而解决了GOLOG语言在应用于面向agent程序设计时不能有效地描述处理agent心智状态,无法处理外因行动等问题.给出了AOPLID语言语法结构,基于OSC的AOPLID程序语义以及AOPLID程序实例.

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