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Michael Thielscher

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ACTION PROGRAMMING LANGUAGES

Michael Thielscher
Department of Computer Science,
Technische Universität Dresden,
Dresden, Germany

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ABSTRACT

Artificial systems that think and behave intelligently are one of the most exciting and challenging goals of Artificial Intelligence. *Action Programming* is the art and science of devising high-level control strategies for autonomous systems which employ a mental model of their environment and which reason about their actions as a means to achieve their goals. Applications of this programming paradigm include autonomous software agents, mobile robots with high-level reasoning capabilities, and General Game Playing. These lecture notes give an in-depth introduction to the current state-of-the-art in action programming. The main topics are

- knowledge representation for actions,
- procedural action programming,
- planning,
- agent logic programs, and
- reactive, behavior-based agents.

The only prerequisite for understanding the material in these lecture notes is some general programming experience and basic knowledge of classical first-order logic.

KEYWORDS

Agent programming, cognitive robotics, knowledge representation

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