

GOAL-MANAGEMENT FOR LONG TERM AUTONOMY

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Goal Directed Behaviour in AI

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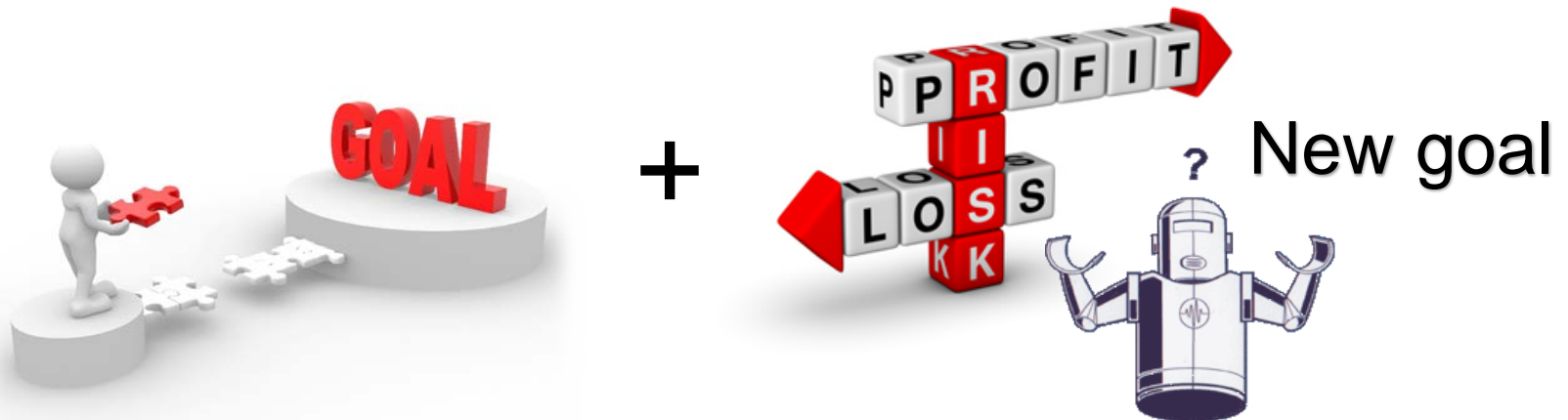
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EVENTS



Background

- Goal directed behaviour in Artificial Intelligence:
 - Typically understood: the autonomy of actions
 - Recently the automation of actions + the autonomy of goals [1].



Objectives

- Analyse the problem of goal management in autonomous agents and more specifically Goal-Oriented behaviour
- Design appropriate algorithms, methods, and systems to allow intelligent agents to:
 - adapt to the change in the environment
 - achieve better outcomes
 - achieve a higher level of goal driven autonomy
- most importantly focus on being domain independent

Stages of development

- Simulate and monitor the plan execution
- Receive new information
- Repair the plan

- Utilise semantic representations
- Integrate new knowledge into the system
- Manage goals
 - formulate new goals that were not initially presented in the agent model

Mohannad Babli, Jesús Ibáñez, Laura Sebastián, Antonio Garrido, Eva Onaindia

An Intelligent System for Smart Tourism Simulation in a Dynamic Environment

Second Workshop on Artificial Intelligence and Internet of Things (AI-IoT),

<http://ceur-ws.org/Vol-1724/> urn:nbn:de:0074-1724-4, pp. 15-22, (2016)

In progress



Expected Results

- Context-aware agent
- Intelligent adaptation
- Management of new goals
- Domain independent methods that can be applied for goal driven autonomy in any application domain

Example of Potential Applications

- Smart tourism applications / Recommendation systems
- Autonomous unmanned vehicles
 - Space
 - Underwater
 - Hazardous environments
- Intelligent Traffic systems
- Strategic decision support systems
- Many other applications that demand an intelligent agent to rationally deliberate and autonomously function.

References

1. Vattam, S., Klenk, M., Molineaux, M. and Aha, D.W., 2013. *Breadth of approaches to goal reasoning: A research survey*. Naval Research Lab Washington DC.

Thank you for your attention!

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