prof. Kurosh Madani:

Artificial Curiosity as Foundation for Machines' Autonomous interactive Knowledge Acquisition

Abstract: If numerous machines outperform human capacities in term of processing speed, still none of them can truly be called "intelligent". In fact, often fully automatic, they remain rarely fully autonomous in their knowledge acquisition or in interpretation of acquired knowledge. To reach such human-like high-level skills, development of bio-inspired human-like machine-cognition artificial mechanisms is a central point. In fact an artificial cognitive system, which would be able to comprehend (e.g. perceive and understand) the surrounding world, but whose comprehension would be non-human, would subsequently be incapable of communicating about it with its human counterparts. Thus, machine-cognition involving as well the autonomous knowledge acquisition as the autonomous interpretation of the acquired knowledge remains a chief requirement toward machines' intelligence.

This talk aims to present recent investigations accomplished in LISSI Lab. of UPEC concerning this appealing, but difficult, aspect. The proposed approach is an "Artificial Curiosity" based machine-cognition mechanism capable of autonomous knowledge acquisition from low level data by observation and by interaction with its environment including humans.

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