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POSGRADO

Like Alice in Wonderland: Unraveling Reasoning and Cognition Using Analogies and Concept Blending

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Facultad de Informática
Sala de Grados - 16 de junio de 2016 – 10:00
Entrada libre hasta completar el aforo

Resumen:

Analogy is one of the most studied representatives of a family of non-classical forms of reasoning working across different domains, usually taken to play a crucial role in creative thought and problem-solving. In the first part of the talk, I will shortly introduce general principles of computational analogy models (relying on a generalization-based approach to analogy-making). We will then have a closer look at Heuristic-Driven Theory Projection (HDTP) as an example for a theoretical framework and implemented system: HDTP computes analogical relations and inferences for domains which are represented using many-sorted first-order logic languages, applying a restricted form of higher-order anti-unification for finding shared structural elements common to both domains. The presentation of the framework will be followed by a few reflections on the "cognitive plausibility" of the approach motivated by theoretical complexity and tractability considerations.
In the second part of the talk I will discuss an application of HDTP to modeling essential parts of concept blending processes as current "hot topic" in Cognitive Science. Here, I will sketch an analogy-inspired formal account of concept blending —developed in the European FP7-funded Concept Invention Theory (COINVENT) project— combining HDTP with mechanisms from Case-Based Reasoning.

Sobre Tarek R. Besold:

Tarek R. Besold (https://sites.google.com/site/tarekbesold/) is a PostDoc in the KRDB Research Centre at the Faculty of Computer Science of the Free University of Bozen-Bolzano (South Tyrol, Italy). Before that, he was a member of the AI Research Group at the Institute of Cognitive Science of the University of Osnabrück (Germany), and an academic visitor at the Centre for Intelligent Systems and their Applications (CISA) within the School of Informatics at the University of Edinburgh (Scotland, UK). Among his main fields of scientific interest are cognitively-inspired forms of non-classical reasoning, human-level Artificial Intelligence, neural-symbolic integration, and computational creativity.