SCIENCE*SPRING*DAY

FCT
FACULDADE DE
CIÊNCIAS E TECNOLOGIA
UNIVERSIDADE NOVA DE LISBOA

Departamento de Informática

Knowledge Representation

Knowledge and Information Systems Group

CENTRIA

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Degrees:
1997: MSc from FCT/UNL
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Objectives

Developing systems that are able to exhibit some form of intelligence in dealing with complex problems is the ultimate goal of research in Artificial Intelligence. With the revolution fostered by the Internet, such intelligent systems need to deal with increasingly large bodies of knowledge – often heterogeneous, dynamic, and even inconsistent – and use a combination of different reasoning techniques.

The goal is to develop theories and tools to be able to represent and efficiently reason with such heterogeneous dynamic knowledge, and use them to develop new applications.
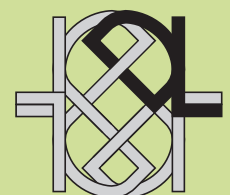
Methodology

The research is structured along three projects:
- ERRO – Efficient Reasoning with Rules and Ontologies where we investigate the efficient joint use of ontologies and different kinds of rules originated from diversity of sources. [PTDC/EIA-CCO/121823/2010]
- ASPEN – Answer Set Programming with BoolEaN Satisfiability where we investigate the use of SAT-Solvers to efficiently implement reasoners for Answer-Set Programming. [PTDC/EIA-CCO/110921/2009]
- SocialArg – Social Argumentation where we employ concepts from argumentation theory to structure online debates. [CENTRIA/KRR/SAF]

Expected Results

- State-of-the-art platform and tools for querying and updating (possibly inconsistent) knowledge bases tightly integrating ontologies and reasoning rules.
- A Social Abstract Argumentation model and application capable of dealing with the logical, social and dynamic structure of online debates.
- Advancements to the state-of-the-art in the theory and practice of knowledge representation and reasoning.

Semantic Web

KRKS

TEP

KDL

ERRO.
efficient reasoning with rules and ontologies