Thesis:

Ontological Requirements for Supporting Smart Navigation of Philosophical Resources

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Abstract

This thesis describes a novel method for formalizing philosophical knowledge and shows how, by using it, it is possible to produce intelligent navigation mechanisms for supporting learning about philosophy.

The approach taken relies on the usage of Semantic Web technologies for the codification of the meaning of data and the retrieval of relevant resources. As such, it represents a groundbreaking attempt to adopt these disciplines in a less *traditional* domain; a domain that, because of its inherent abstractness, poses peculiar problems both at the epistemological and the knowledge representation levels.

What are the major types of entities playing a role in philosophical discourse, and how shall we proceed in order to have a computer manipulate efficiently a set of representations *about* them? These are the kind of questions lying at the heart of our research. Moreover, we attempt to test this formal framework by putting it into practice with a real-world application, PhiloSurfical.

PhiloSurfical is a prototype tool created with the purpose of helping students learn about a classic in twentieth century philosophy, Wittgenstein's 'Tractatus Logico-Philosophicus', by means of dynamic and contextual navigation mechanisms. In particular, the dissertation discusses how such mechanisms could be developed so to mimic some of the classic *ways* the philosophical

discipline employs to *narrate* itself. For this reason, we generally refer to them as *narrative pathways* (e.g., *historical* narrative, *theoretical* narrative, etc.).

Evaluation of both the ontology and the prototype tool have shown positive results. Also, it has revealed interesting and complementary research direction which we present in the final sections of this work.

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To all the others I have not mentioned - do not worry, I’ll be with you as soon as I finish the PhD :-)

Publications

Conferences

• *"Formalizing 'philosophical' narratives: the tension between form and content"*, Pasin, M., Shum, S. B., & Motta, E. (2008). European Computing and Philosophy Conference (ECAP08), Montpellier, France.
• *"Capturing Knowledge About Philosophy"*. Pasin, M., Motta, E., Zdrahal, Z., 2007. K-CAP 2007 - Fourth International Conference on Knowledge Capture.
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• *"An ontology for the description and navigation through philosophical resources"*, M.Pasin, E.Motta. European Conference on Philosophy and Computing, ECAP-06, June 2006, Trondheim, Norway.
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• *"AquaLog: An ontology-driven question answering system for organizational semantic intranets"*, Lopez, V., Uren, V., Motta, E., Pasin, M. , 2007. Journal of Web Semantics, Vol.5, 2, (72-105), Elsevier.
• *"Ontological Requirements for Annotation and Navigation of Philosophical Resources"*, Pasin, M., Motta E., *to appear in* Synthese, 2009, Special Issue on representing philosophy.

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• *"Paving the way towards the e-humanities: a Semantic Web approach to support the learning of philosophy"*, M.Pasin, E.Motta. 3rd European Semantic Web Conference 2006, ESWC-06, June 2006, Budva, Montenegro.
• *"Semantic Learning Narratives"*, M.Pasin, E.Motta. International Workshop on Applications of Semantic Web Technologies for E-Learning (SW-EL), KCAP-05, October 2005, Banff, Canada.
• *"Using the Semantic Web to Navigate Conceptual Spaces: an Application for the Philosophical Domain"*, M.Pasin, E.Motta. AKT Doctoral Symposium, June 2005, Milton Keynes, UK

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