

Proposal for Ph.D. General Examinations

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Introduction

How can a machine talk about figments of its imagination? How can it refer to events in time, causes and effects and non-existent objects? How can it employ words and sentences to explain the world according to its internal theories? These questions are important if we are to build machines that can communicate with human beings and other machines about their shared physical, social and mental worlds. Answering them requires giving a machine the ability to construct mental models and theories of these worlds, and to connect them in rich ways to words and sentences. My goal in this examination is to study the areas pertaining to these types of imaginative mental semantics.

This exam includes areas relating to these types of meanings and mental representations in humans and in machines. The main area covers cognitive theories of meaning from a linguistic and computational point of view. The technical supporting area covers cognitively inspired approaches to causality and theory learning, whereas the contextual supporting area is that of philosophy of mental representation.