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PSYCH256

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**Term paper proposal**

Question: What is the frame problem (in both its narrow logico-mathematical sense, and its broader epistemological sense) and why is it a problem for AI research? What new tools in machine learning might be utilized to overcome problems of “background beliefs/knowledge” in the programming of AI?

Title: Reframing the frame problem problem

Outline:

Intro

The advent of modern computing has allowed for Artificial Intelligence (AI) to take the spotlight in the eyes of the mass media. More than ever, ‘novel’ solutions using some form of Deep Learning and Artificial Intelligence have appeared. For example, just recently, major graphics processing unit developer Nvidia released DLSS 3.0, an AI algorithm which generates entirely new frames in games to allow for an overall smoother feeling gameplay (citation here). However, as AI gets more generalized and more advanced, there is growing concern that AI may run headlong into the wall that is the frame problem. However, I posit that given techniques such as the default logic solution, the frame problem is a non-issue for AI in its current and near future forms.

Define frame problem

Critique problems against AI

Tools (critique and thoughts):

Fluent occlusion solution

Probabilistic testing

Global workspace theory

Default logic solution

Counter arguments

Not a proper solution, just a workaround

Its true, but it provides an imperfect but lower complexity model, which is what scientists have been using as models for understanding the world (i.e pi, newtons 3 laws, ect).

Citations: APA

Readings:

Frege, “The Thought: A Logical Inquiry”

- Dennett, “Cognitive Wheels”

- McCarthy and Hayes, “Some Philosophical Problems from the Standpoint of AI”

Non required readings

<https://arxiv.org/abs/2012.09810>

<https://ieeexplore.ieee.org/abstract/document/6637024?casa_token=bjYPeSwvfx4AAAAA:yY4oC9ehHdmAlCP7xTXbAeu91U__CvPq4P8ONE264Vma-1E7Zc-HMLRhVkl-M_2tzu3LECjKodgl>

<https://plato.stanford.edu/entries/frame-problem/#:~:text=To%20most%20AI%20researchers%2C%20the,suggestive%20of%20wider%20epistemological%20issues>.

 ([Leibniz](https://en.wikipedia.org/wiki/Gottfried_Wilhelm_Leibniz), "An Introduction to a Secret Encyclopædia", *c*. 1679

Text

Description automatically generated with medium confidence

Extra references that I’m DEFINETLY not using

<https://en.wikipedia.org/wiki/Frame_problem#Solutions>