

How a computer should think about evidence

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Evidence, probability, and logic are related in several ways, and reasoning with evidence is a philosophical topic with strong interest for machine learning and AI. I discuss an intuitively appealing probabilistic semantics for LET_F , a paracomplete and paraconsistent extension of the logic of First-Degree Entailment (FDE) expanded with operators for consistency $\circ\alpha$ and inconsistency $\bullet\alpha$. I show that LET_F is suitable for an interpretation in terms of preservation of non-conclusive and conclusive evidence, the later being understood as truth. Extending work done in [2], evidence can be quantified by giving a probabilistic semantics for LET_F in terms of measures of evidence.

References

- [1] N. BELNAP , *How a computer should think*, G. Ryle (Editor), Contemporary Aspects of Philosophy, Oriel Press, Stocksfield, pages 30—56, 1977.
- [2] W. A. CARNIELLI; A. RODRIGUES, *An epistemic approach to paraconsistency: a logic of evidence and truth*, Synthese. Available from <https://link.springer.com/article>