

Logical Distance Safety Structure (LDSS) for Ethical AI Decision Making

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Abstract

This paper presents the logical distance safety structure (LDSS), a structured approach for AI safety that quantifies ontological, ethical and contextual distances to detect and block unsafe analogical reasoning. LDSS combines graph-based reasoning, moral vector embeddings and contextual analysis in a composite metric, allowing AI systems to flag risky inferences transparently across domains. Details on moral vector construction, domain-specific threshold calibration and fallback handling for cross-cultural ethical differences are provided, addressing practical deployment challenges.

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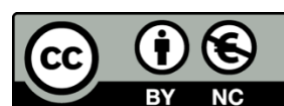
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