

Title of Poster

Supporting User-Centric Explanation Types for Clinical Reasoning

b) Classification: Types of Computable Biomedical Knowledge (CBK); Systems, Platforms, Tools and Services

c) Author (s) Information

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d) Poster Description

The proliferation of machine learning techniques in healthcare, and other critical and user-facing applications, has led to a renewed emphasis on developing explainable Artificial Intelligence (AI) models and systems. Researchers have proposed different, narrow definitions for explainability, often not grounded in specific user situations. To address these limitations, we conducted a literature review in the computer science, sociology, and philosophy domains, surveying different explanation types that address different user goals. We then designed an explanation ontology to model both the role of explanations, accounting for the system and user attributes in the process, and the range of different, literature-derived explanation types. User-centered studies helped us to validate and refine a range of literature-based explanation types from the concrete examples needed in guideline-based care. Also, we found that the modeling of explanations requires various components to support AI system design, such as different forms of knowledge, reasoning methods, and modes. This poster presentation is particularly relevant to system designers who may be able to leverage our ontology-enabled infrastructure to build explainable AI systems in clinical decision support settings.