Proof-Theoretic Approach to Logic of Utterance-Context Interaction

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Aim
Study interdependence of knowledge, belief, preference, permission, or obligation of agents on social relationship between agents, from the proof-theoretic viewpoint. In particular:

1. Investigate **Labelled Sequent Calculus** of Dynamic Epistemic Logic
2. Expand 1 to **Two-dimensional Setting** w/ or w/o Hybrid Logic
3. Formalize **Possible Change of Social Relationship** among Agents

How

**Key Semantic Idea**

- Traditional View:
  \[ w \models B \text{ if solved 7th open problem} \]

- Semantic View of Facebook Logic (2011):
  \[ (w, a) \models B \text{ if solved 7th open problem} \]

**Key Syntactic Idea: label**

\[ \mathcal{M} \varphi_1, \ldots, \varphi_n, w \models \psi \]
\[ \models x: (\varphi_1, \ldots, \varphi_n) \psi \]

**2D Hybrid Logic (Sano 2009)**

\[ @, @_p \land (\text{Future})i \land (\text{Up})a \rightarrow (\text{Future})(\text{Up})p \]

Selected References


If you are interested in Hilbert-style axiomatization of Epistemic Logic of Friendship, please come to my talk at LORI VI, scheduled on 13th September 2017!