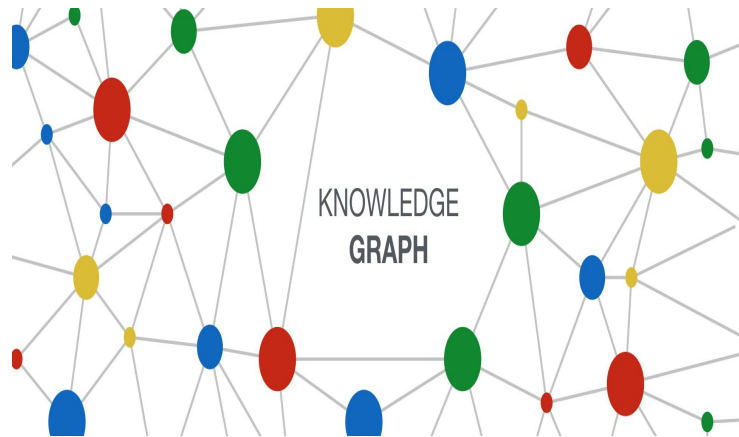# Knowledge Representation Formalisms for Hybrid Intelligence

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KNOWLEDGE GRAPH
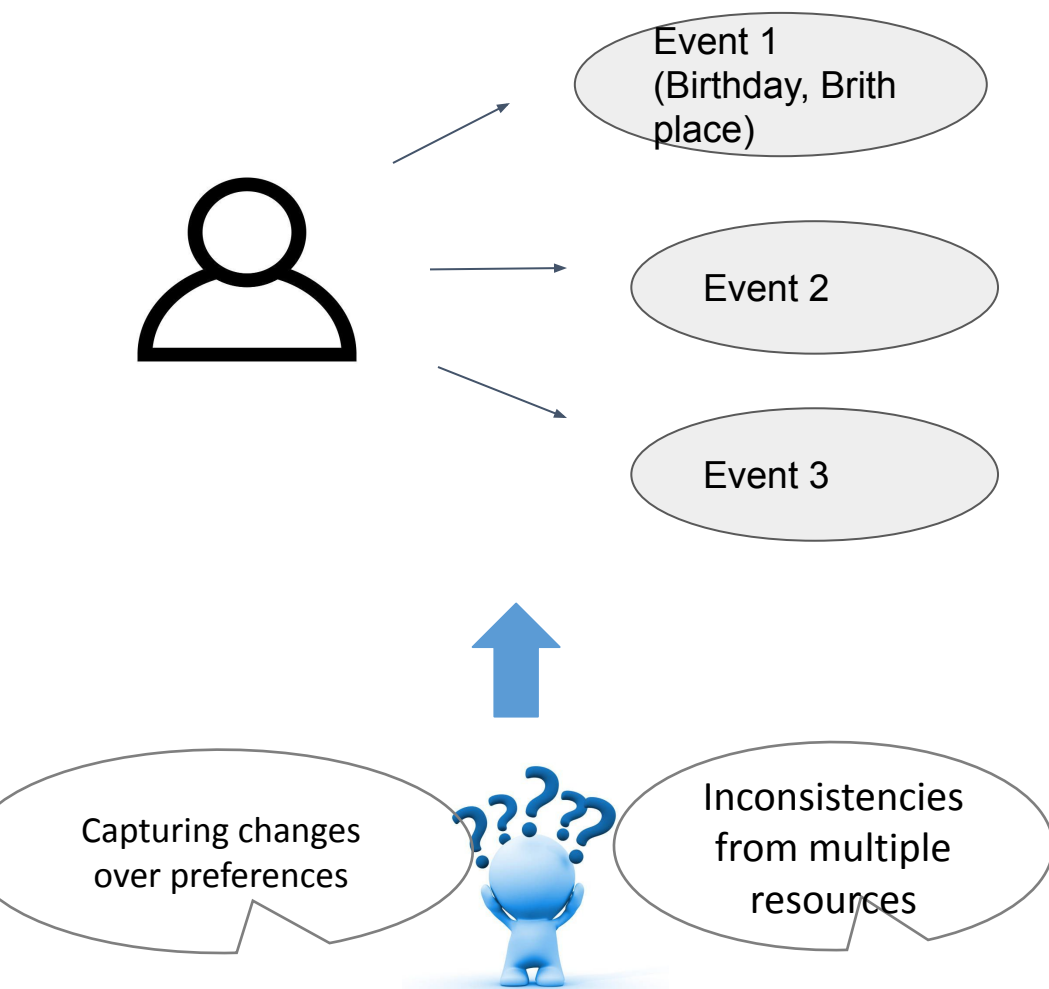
represent and adapt knowledge dynamically

Hybrid Intelligence scenarios

- **Main goal:** developing knowledge representation solutions for representing and adapting the contextual and dynamic situations

Use-case 1: Biographical Dictionary Domain
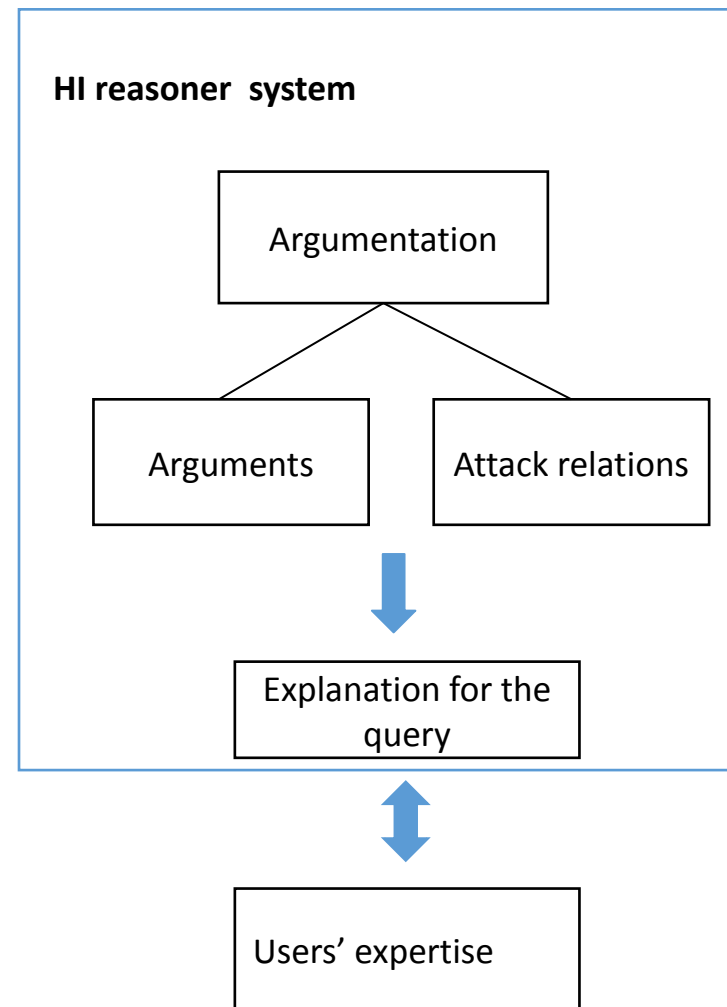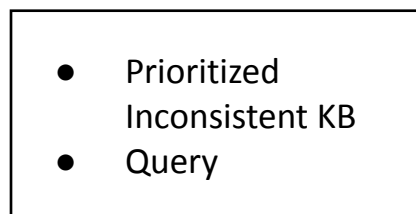
Cultural heritage domain/ Dutch

Research Method
Idea: Argumentation Framework + Human-in-loop approach

Event 1
(Birthday, Brith place)

Event 2

Event 3

Capturing changes over preferences

Inconsistencies from multiple resources

- Prioritized Inconsistent KB
- Query

HI reasoner system

Argumentation

Arguments

Attack relations

Explanation for the query

Users' expertise

Future work

- Perform and evaluation experiments.
- Perform human-in-loop approach to allow HI reasoner system to adapt and represent user preferences.
- Consider scenario in the medical domain.

Scenario - behavioral health management

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                        ┌─────────┐
                        │  User   │
                        └─────────┘
                            ⇕
                 ┌─────────────────────┐
                 │  HI recommendation  │
                 └─────────────────────┘
         ↗               ↑              ↖
┌──────────────┐  ┌──────────────┐  ┌──────────────┐
│ Patient's    │  │ behavioral   │  │ daily        │
│ medical      │  │ data on      │  │ personal     │
│ status       │  │ physical     │  │ schedule     │
│ history      │  │ activity and │  │              │
│              │  │ diet         │  │              │
└──────────────┘  └──────────────┘  └──────────────┘
```