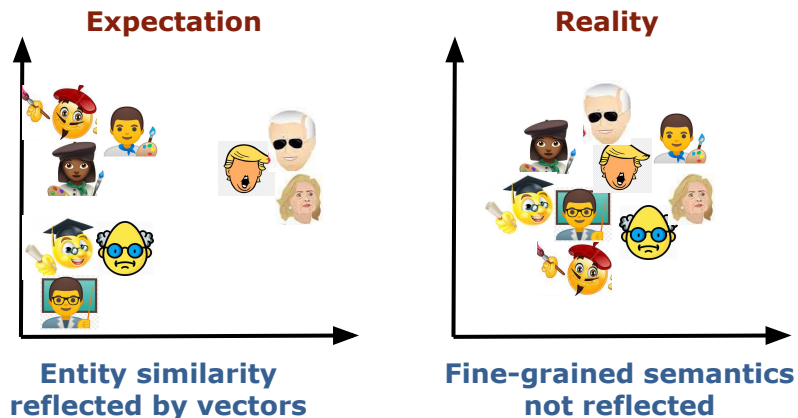


Knowledge Graph Representation with Embeddings

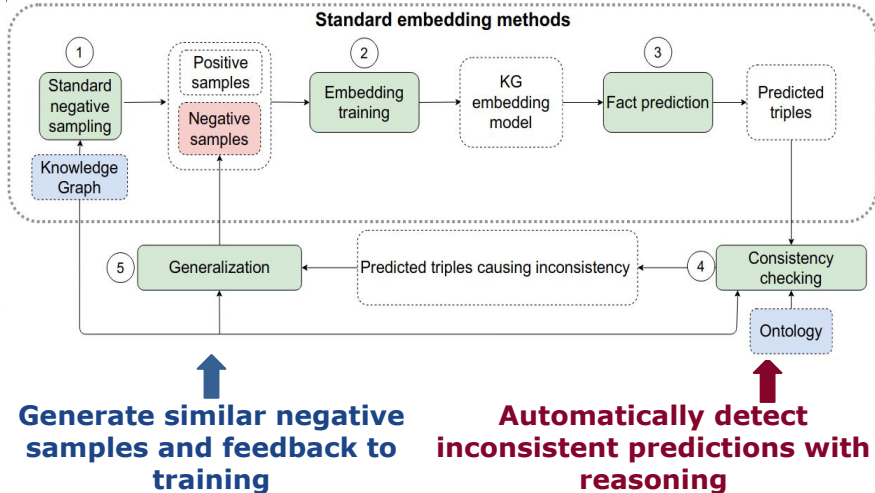
Nitisha Jain, Jan-Christoph Kalo, Wolf-Tilo Balke, Ralf Krestel,
Trung-Kien Tran, Mohamed H. Gad-Elrab, Daria Stepanova

Semantics in Knowledge Graph Embeddings



- Real-world entities frequently belong to **more than one** semantic type or class
- Most relations are neither unique nor indicative of any single class in particular: *bornIn, hasSpouse..*
- **Ontology** and **reasoning** can help with improving the semantics of embeddings

ReasonKGE : Ontology-driven Negative Sampling



- **Dynamic** generation of negative samples to target **difficult** cases, **iterative feedback**
- Improve model **accuracy**, more **consistent** predictions

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