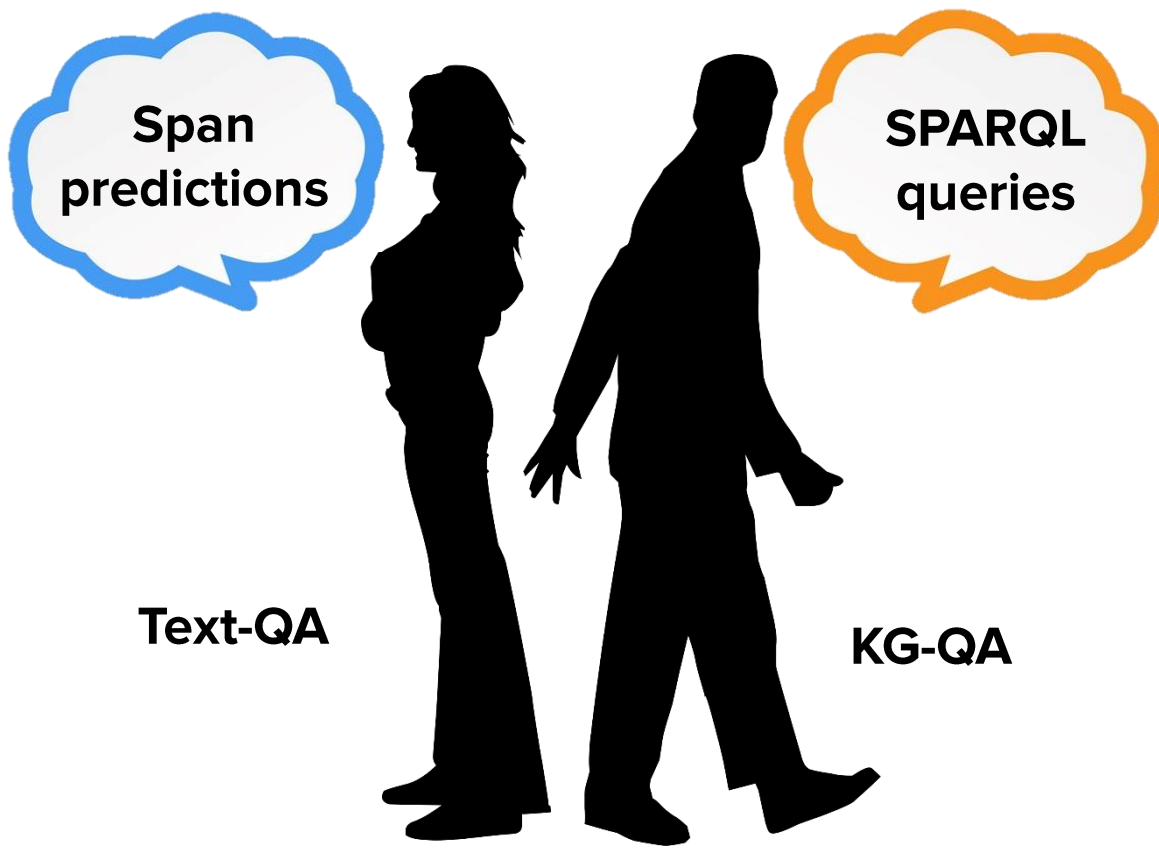




UniQORN: Unified Question Answering over RDF Knowledge Graphs and Natural Language Text

Rishiraj Saha Roy



STATE-OF-THE-ART IS FRAGMENTED

- Crisp answers to factoid questions enhances user experience
- Curated **knowledge graphs** and open Web **text** both valuable sources
- But QA methods in the two paradigms are **incompatible** to each other
- Fragmented state-of-the-art leads to **sub-optimal** use of sources

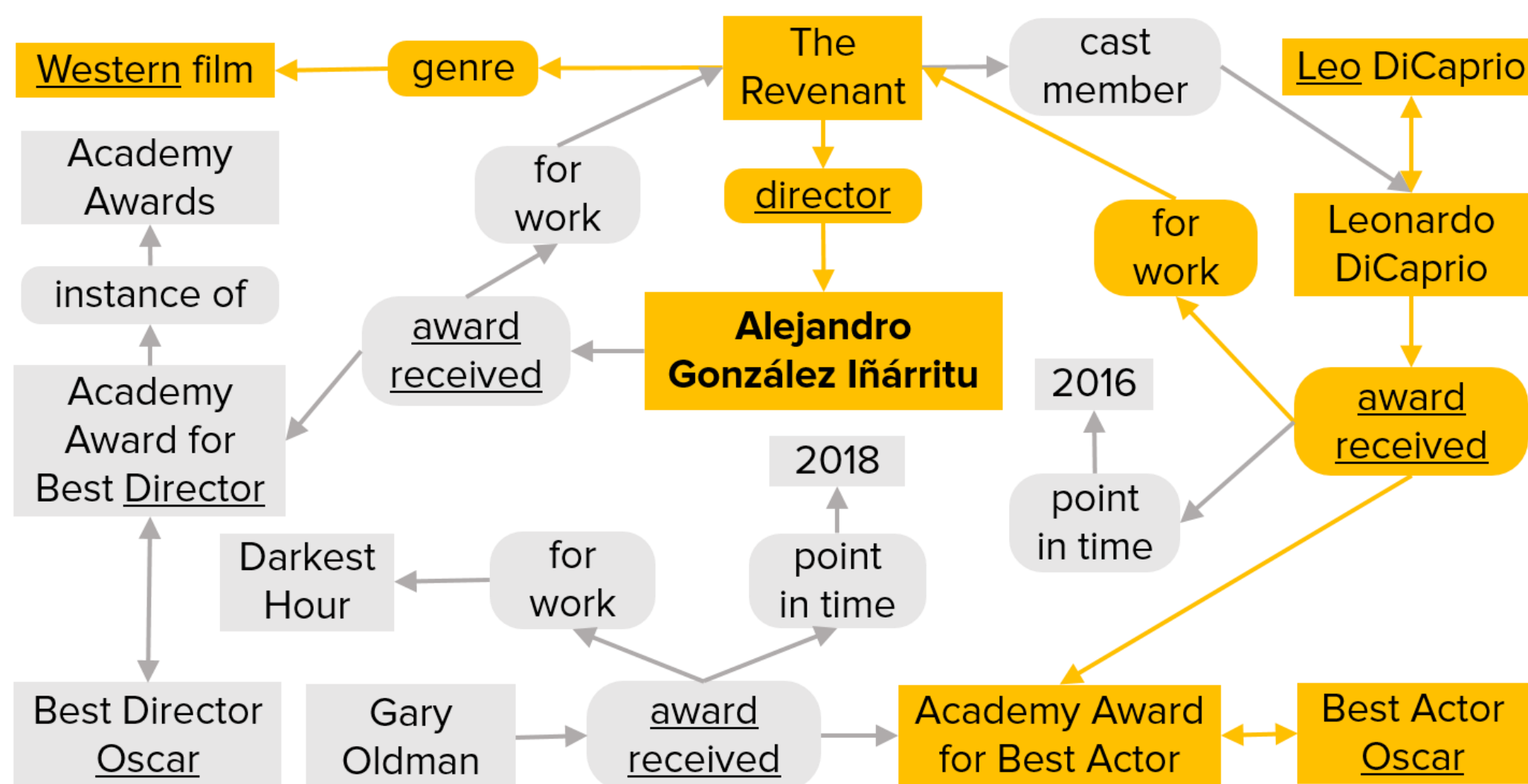
PROPOSAL FOR A UNIFIED FRAMEWORK

- Build **context graph (XG) on-the-fly** from KG or text with question-specific triples
- For text, induce **quasi-KG** with Open IE and overlay alignments and types
- Identify question-relevant **anchors** in XG
- Compute **Group Steiner Trees (GST)** on XG with anchors as terminals
- **Non-terminals** in GST are candidate answers, that are **ranked**
- Method is completely **unsupervised**, and developed specially for **complex** questions

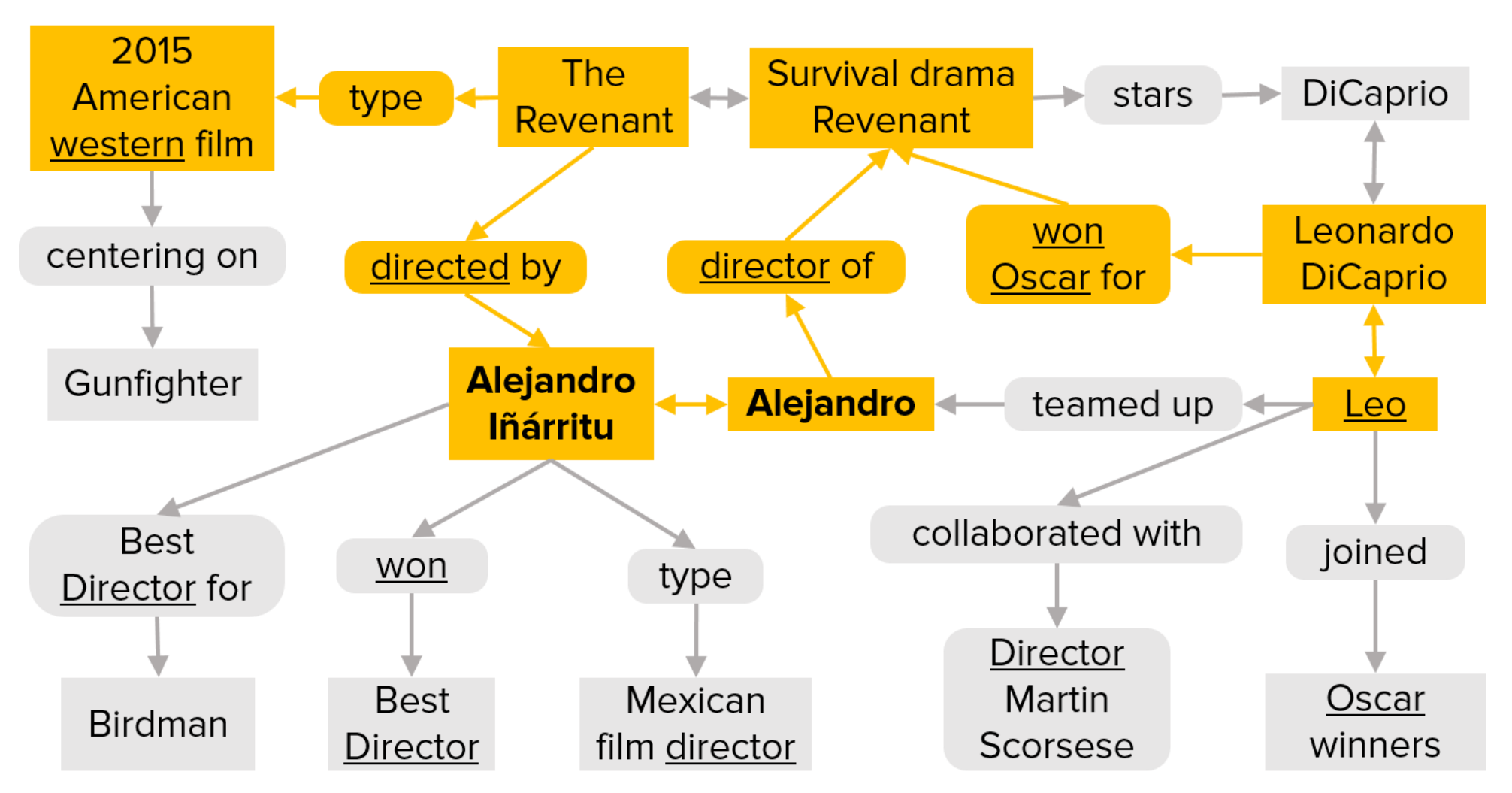


Question: director of the western for which Leo won an Oscar...?

[Answer: Alejandro Iñárritu]



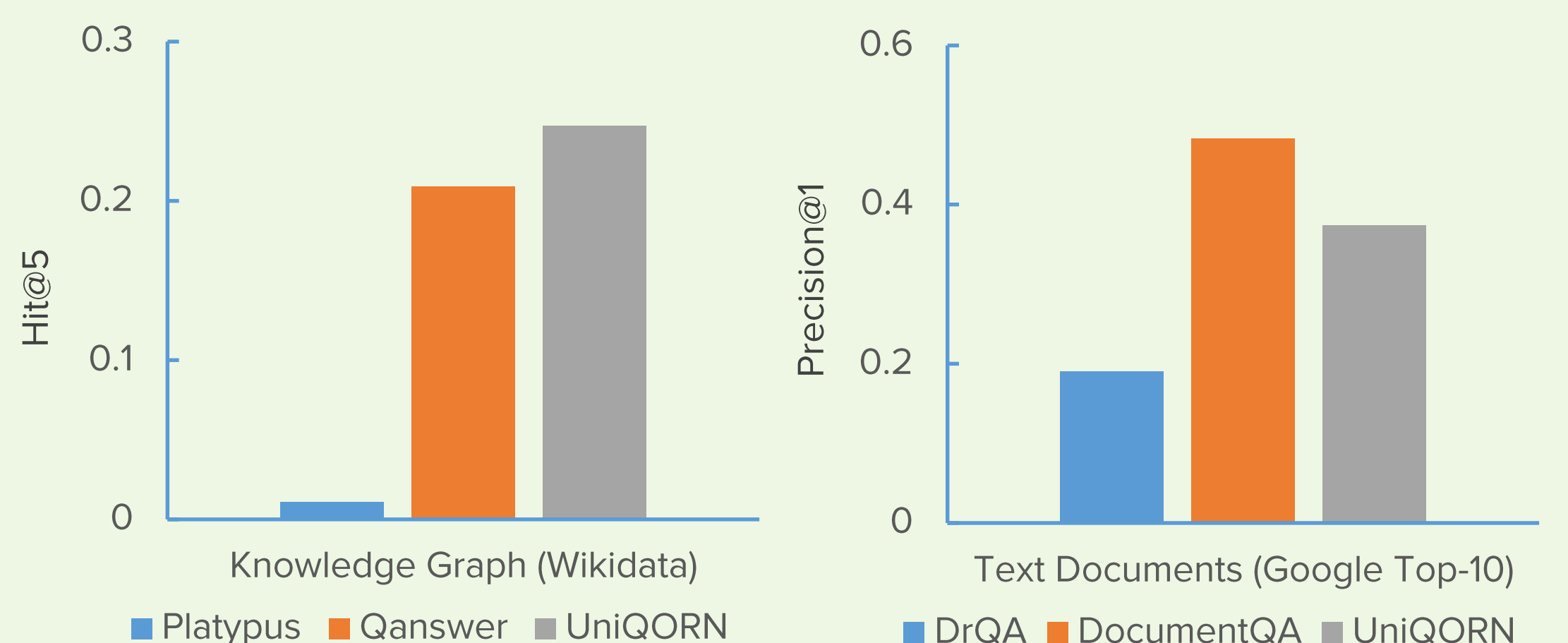
Context graph for KG



Context graph for text

UniQORN IS A VIABLE SOLUTION

- **Complex questions** from four benchmarks
- UniQORN **outperforms or is comparable** to state-of-the-art in both setups!
- **Robust** to syntax errors and noisy sources!
- Provides **explanatory** evidence for answers!



Joint work with: Soumajit Pramanik, Xiaolu Lu, and Gerhard Weikum

