

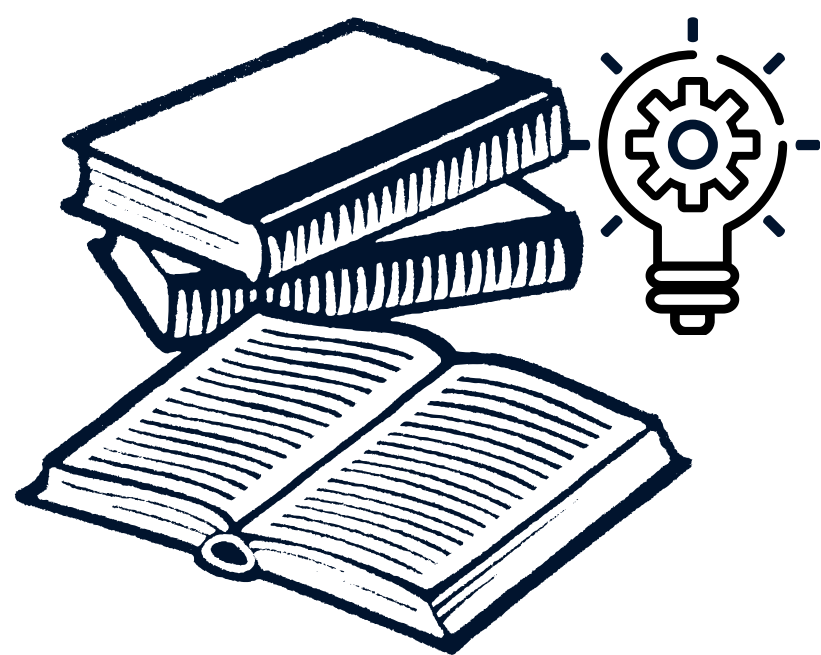
Putting Conversational Search Knowledge into Action by Building and Evaluating a Large Language Model-Powered Chatbot

Sachin Pathiyan Cherumanal, Lin Tian, Futoon Abu Shaqra, Angel Felipe Magnossão de Paula, Kaixin Ji, Halil Ali, Danula Hettiachchi, Johanne R. Trippas, Falk Scholer, Damiano Spina

Motivation



Existing tools



Existing knowledge



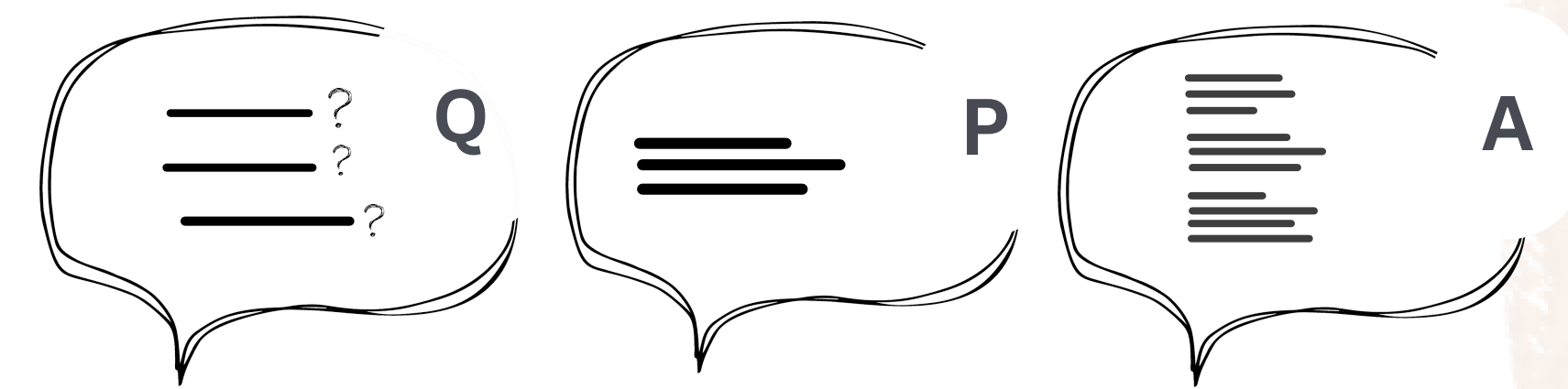
Stakeholder needs

Bridge the gap between academic expertise and industrial needs by translating insights from scholarly papers into practical solutions for stakeholders.

Test Design



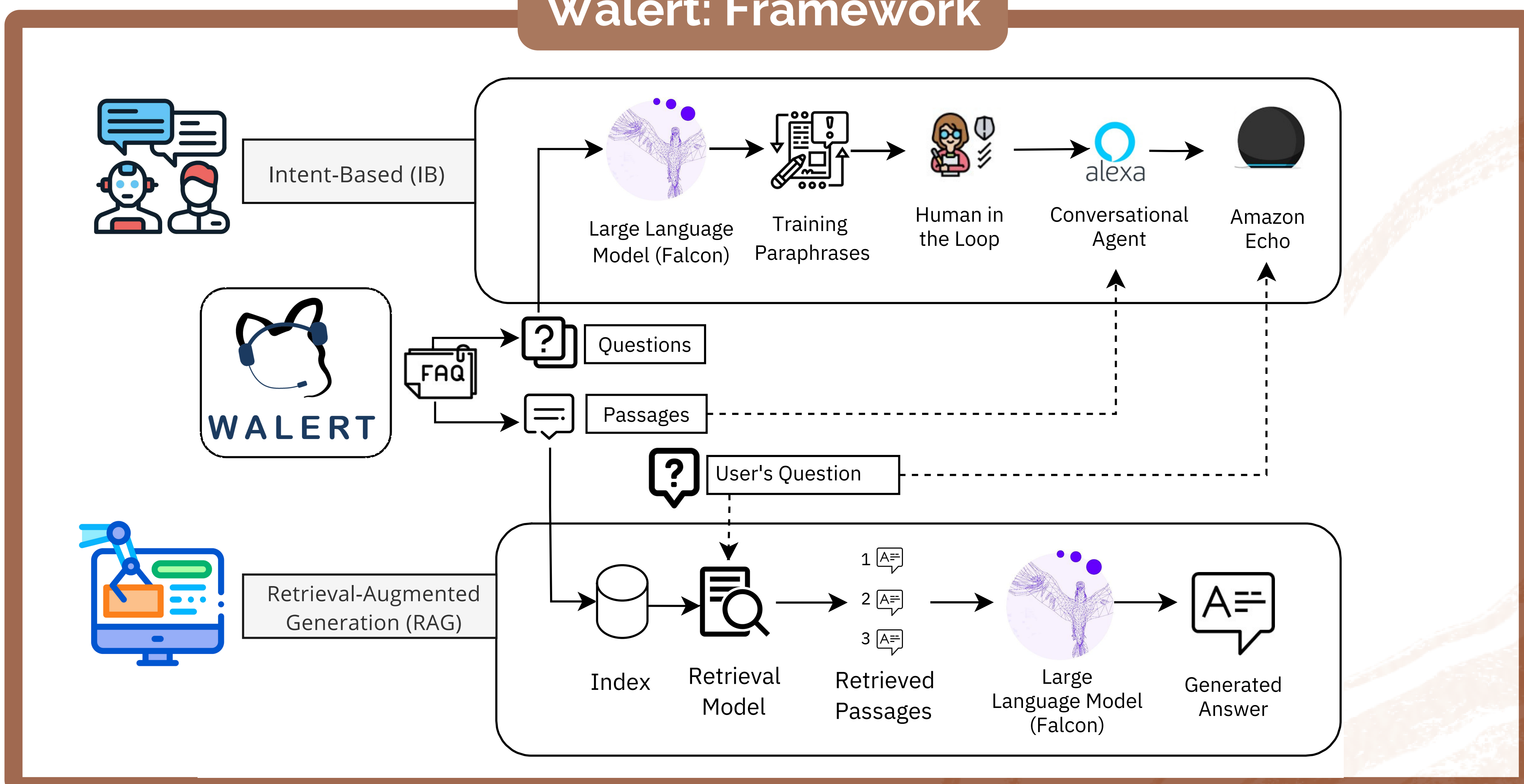
RMIT University -
School of Computing
Technologies (SCT)



Scenarios:

- Questions with Known Answers → Have a Direct Answer in FAQ
- Questions with Inferred Answers → Can be Inferred from multiple passages
- Out-of-Knowledge Base Questions → Can not be answered from FAQ

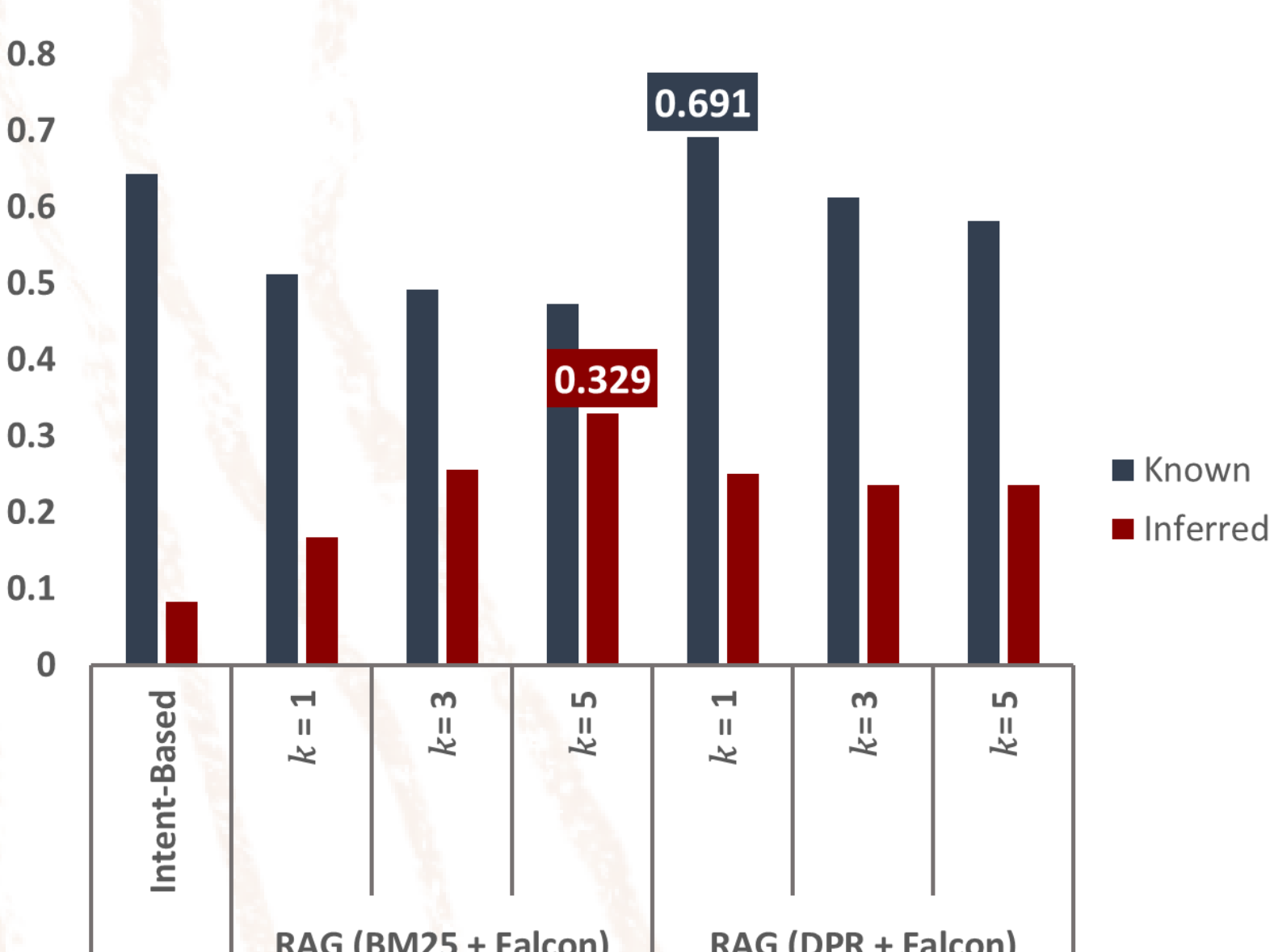
Walert: Framework



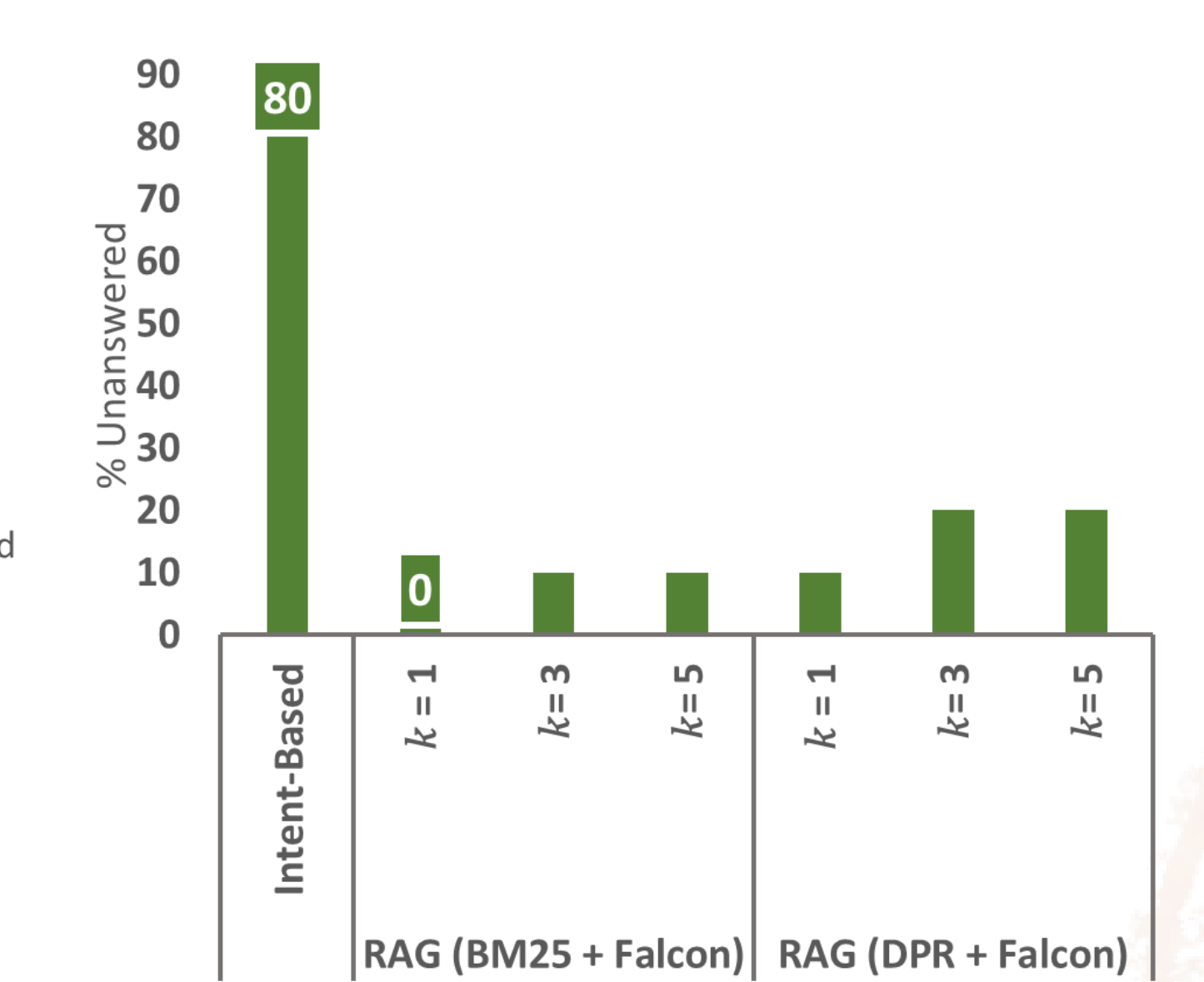
Retrieval Effectiveness

Evaluation

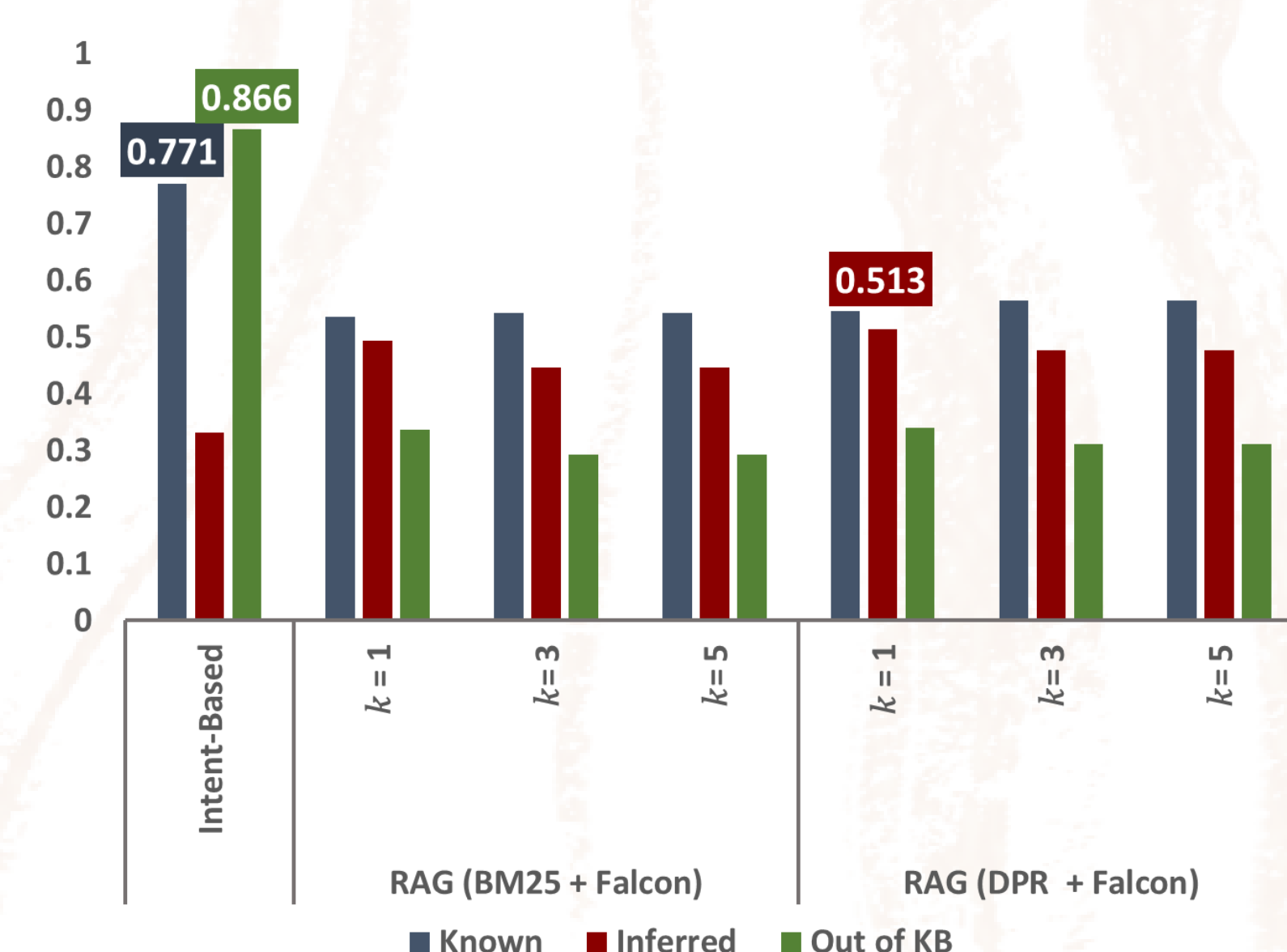
Answers Quality



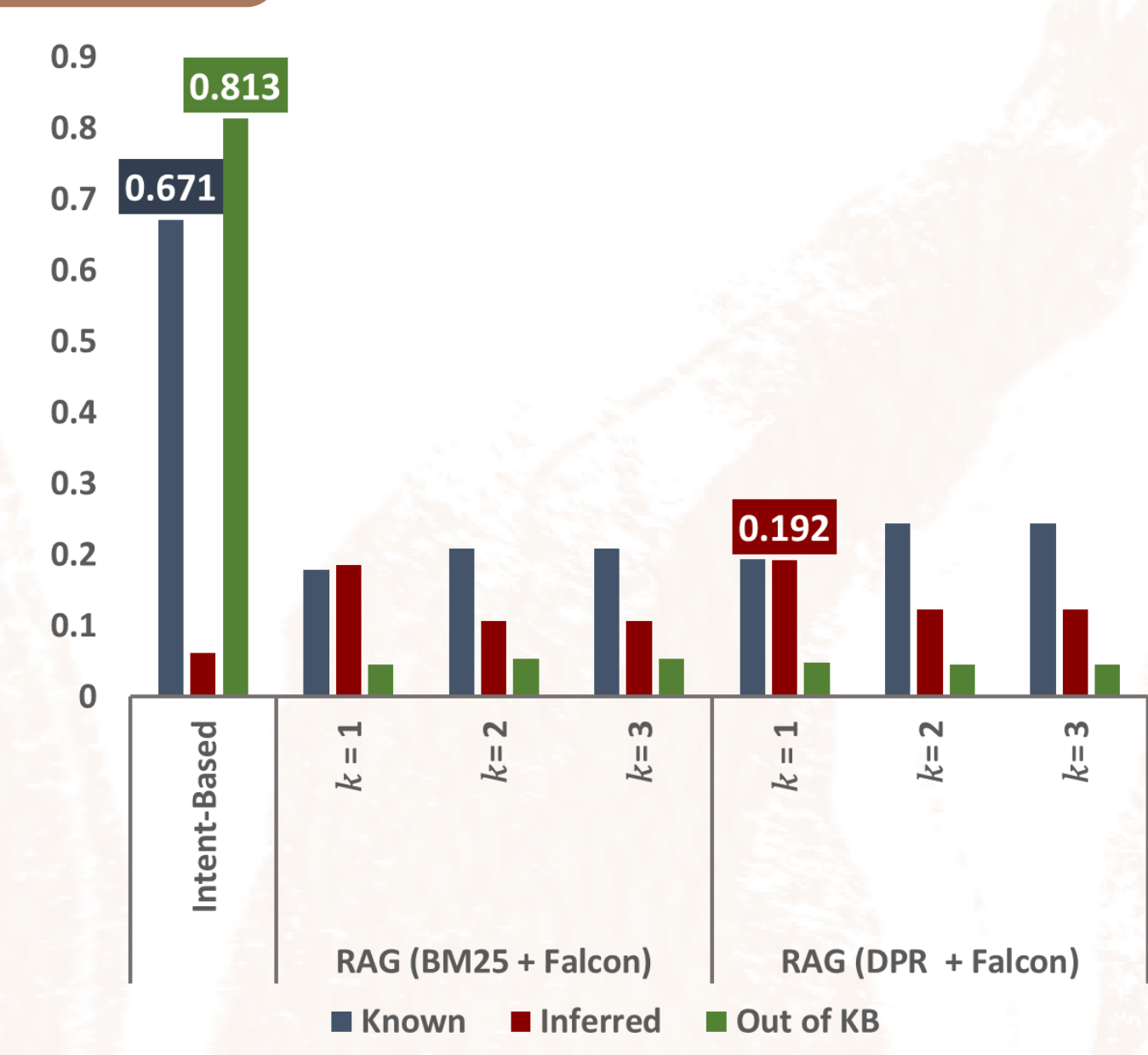
NDCG for Known and Inferred Questions



% of Unanswered for Out of KB Questions



BERTScore



ROUGE-1

Walert (Possum)

"Walert" means "possum" in Woi Wurrung and Boon Wurrung languages. Possum skin cloaks hold stories of individuals, mobs, and Country. They are essential to the Traditional Owners and Custodians of the land where the authors live and work. Our chatbot, Walert, is named as a tribute to this cultural heritage.



github.com/rmit-ir/walert

Walert was designed and developed in the unceded lands of the Wurundjeri and Boon Wurrung peoples of the eastern Kulin Nation. We pay our respects to their Ancestors and Elders, past, present, and emerging. This research is partially supported by the Australian Research Council (DE200100064, CE200100005) and is undertaken with the assistance of computing resources from RACE. We thank Amina Hossain and Santha Sumanasekara for their valuable contributions.