Beyond Boolean

- What's been done?
  - Karimi et al. [37] found that non-Boolean queries can **outperform Boolean queries** for this task
- However:
  - Boolean queries are used in the systematic review protocol to **explicitly control** the search system and for **reproducibility**

[37] Sarvnaz Karimi, Stefan Pohl, Falk Scholer, Lawrence Cavedon, and Justin Zobel. Boolean versus ranked querying for biomedical systematic reviews. BMC Medical Informatics and Decision Making, 10(1):1, 2010.

Performance Prediction

- Rather than changing the approach used to search, can we suggest better queries?

  - How can you predict the effectiveness of a query?
    query performance prediction (**QPP**) [29]

- QPPs are a way of estimating the effectiveness of a query without relevance assessments

  - **pre-retrieval QPPs** use query and collection statistics [26]

  - **post-retrieval QPPs** use statistics about documents that have been retrieved [92, 40, 74, 20]

It is unknown how to apply QPPs to Boolean queries

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[26] Claudia Hauff, Djoerd Hiemstra, and Franciska de Jong. A survey of pre-retrieval query performance predictors. In Proceedings of the 17th ACM CIKM conference on Information and Knowledge Management, pages 1419–1420. ACM, 2008.
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