Suitability of Nearest Neighbour Indexes for Multimedia Relevance Feedback

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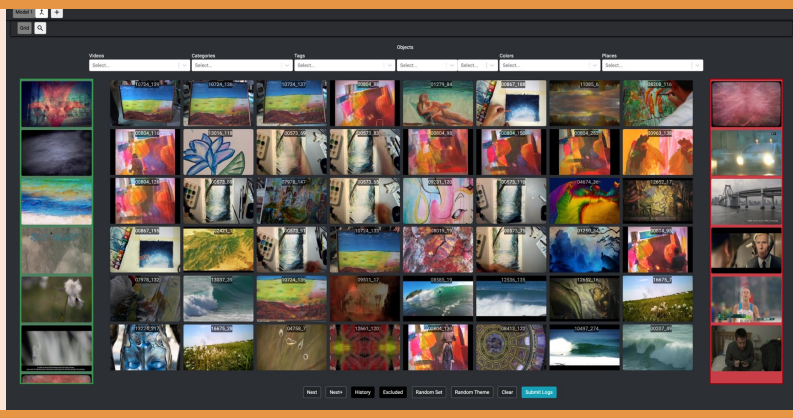
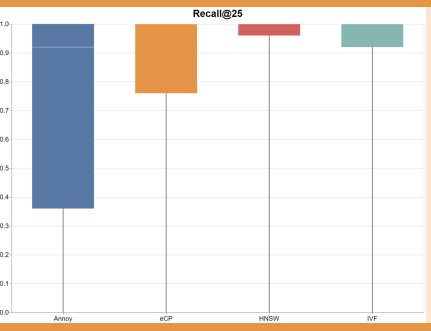
User relevance feedback (URF) queries require computing maximal inner product distance from a linear SVM classifier

Which SOTA index supports URF queries best?



Traditional Recall Analysis

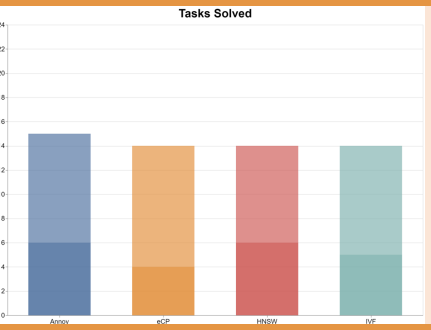


Workload consists of simulated URF processes over a lifelog collection with 42K images

Ground truth is computed using a full sequential scan

HNSW outperforms other approaches

Analysis Based on URF



Ground truth is based on ability to solve 24 lifelog retrieval tasks

Entire URF process uses the same index in each round

All indexes perform similarly

Conclusions

In a URF process, **worse result quality** may lead to more **image diversity** on screen, allowing users to **compensate**

As all approaches perform similarly, future research can focus on the **most scalable approaches**