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ielab at the Open-Source IR Replicability Challenge 2019

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Our Contributions

- An Elasticsearch based Docker image capable of performing replicable IR experiments.
- A tool for processing IR test collection file format into Elasticsearch bulk indexing operations
- A tool for directly issuing TREC topic files to Elasticsearch.

Available at: https://github.com/osirrc/ielab-docker

the Docker Image Capabilities

Indexing and Searching three TREC collections:

- Robust04 - TREC 2004
- Core17 - TREC New York Times Annotated Corpus
- Core18 - TREC Washington Post Corpus

Test Case

Run	MAP	P@30	nDCG@20
robust04 (BM25, k=1000)	0.1826	0.3236	0.3477
core17 (BM25, k=1000)	0.0831	0.2333	0.1779
core18 (BM25, k=1000)	0.1899	0.2760	0.3081

Table 1: Results of runs for the robust04, core17, and core18 collections using our Elasticsearch Docker image. Each run uses the default Elasticsearch BM25 scorer for ranking, and each run retrieves a maximum of 1,000 documents (k).

Reflections

- Need to add a hook that defines the capabilities of a docker image including the official and the standard capabilities.

- Current docker images only allows runs to be replicable but not comparable.

- Listing the capabilities of systems would allow to fairly compare two or more systems with the same capabilities.