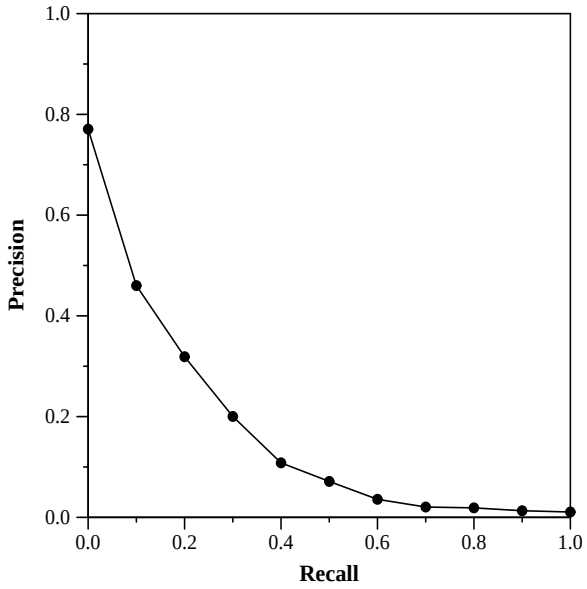
Deep Learning Track results — (DOSSIER) TU Vienna

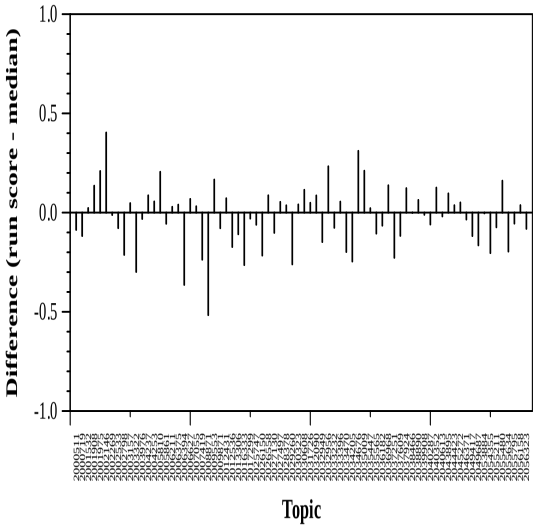
Run Description	
Run ID:	tuvienna-pas-unicol
Task:	Passage Ranking
Subtask:	Full ranking from the collection
Topic type:	Automatic
Single-stage retrieval?	Yes
Dense retrieval?	Yes
Baseline run?	No
Used deep nn model?	Pre-trained model
Type of training:	Previous year's MS MARCO training data
Training cost:	There are 3 stages of training the ColBERTer model. ColBERTer training (80 hours) and then compression training to the 1-dimensional compression (54 GPU hours). All experiments are run on 1 GPU A40 with 48GB memory. Total GPU hours: 134
Pre-processing/indexing cost:	Uni-ColBERTer-dim1: 6 GPU hours vectorizing and indexing. All experiments are run on 1 GPU NVIDIA GeForce RTX 3090 with 24GB memory. Total GPU hours: 5
Query processing cost:	Uni-ColBERTer-dim1: 360 seconds per query for encoding, nn lookup and aggregation All experiments are run on 2 GPU NVIDIA GeForce RTX 3090 with 24GB memory. Total GPU hours: 1

Overall measures	
Number of topics	76
Total number retrieved	6505
Total relevant	4613
Total relevant retrieved	1123
MAP	0.1521
Mean NDCG@10	0.5093
Mean Reciprocal Rank	0.7308

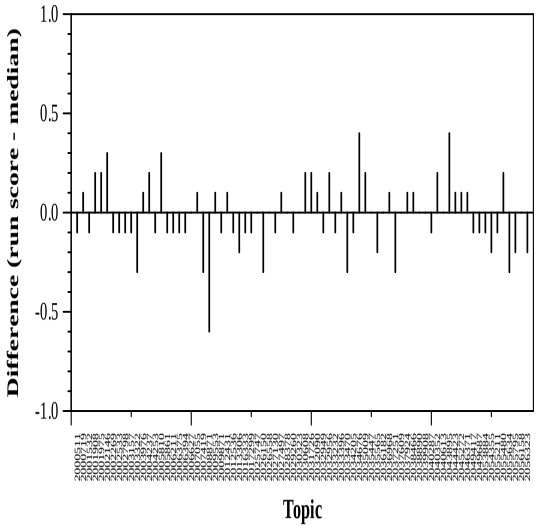
Document Level Averages	
	Precision
At 5 docs	0.4579
At 10 docs	0.4158
At 15 docs	0.3640
At 20 docs	0.3322
At 30 docs	0.2842

R-Precision	
Exact	0.2278

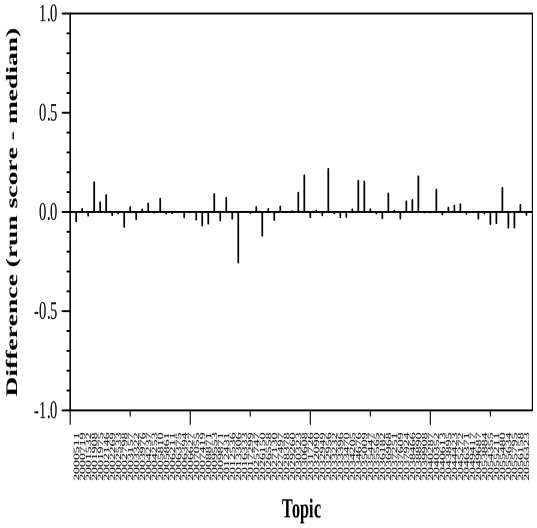




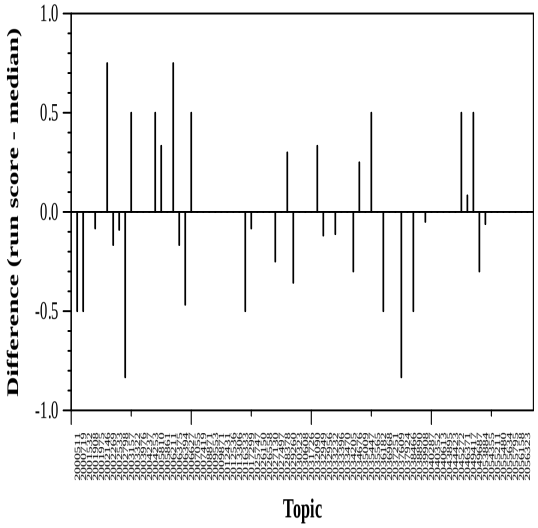
Per-topic difference from median for NDCG@10 for Passage Ranking runs



Per-topic difference from median for Prec@10 for Passage Ranking runs



Per-topic difference from median for Average Precision for Passage Ranking runs



Per-topic difference from median for Reciprocal Rank for Passage Ranking runs