Cluster	Category	Sentence
D097	Natural Disaster	The **storm**, packing **winds of up to 135 mph**, raged into **Charleston Thursday night**.
	Biography	"This is a dangerous, **killer** hurricane, the likes of which few people who have lived all their lives in Charleston have experienced," warned **Mayor** Joseph P. Riley Jr.
	Politics	**Gov.** Joe Frank Harris **declared** a **state of emergency** in six counties.
D066	Biography	Sam Walton, **founder** of the Wal-Mart chain of discount supermarkets who died of cancer in April, negotiated these pitfalls much **better** than most.
	Natural Disaster	By **1991** the chain's sales had risen to nearly **Dollars 44bn**, making it the world's largest retailer in terms of revenues, and the Walton family probably **America**'s richest.
	Politics	Bud is a senior **vice president** and board **member** of Wal-Mart.
D076	Politics	Flamboyant former **Defense Minister** Hazeltine's challenge to **Prime Minister** Margaret Thatcher for **leadership** of the **Conservative Party** has caused a **political** sensation in Britain.
	Biography	In the Persian Gulf crisis, she **boldly** joined with George Bush in sending troops to the Middle East.
	Natural Disaster	Among Western allies, she was alone at Ronald Reagan's side in **1986** in supporting the U.S. **bombing** of **Libya**.

Table 3: Salient sentences selected by different categories. Sentences in the correct categories are displayed first.

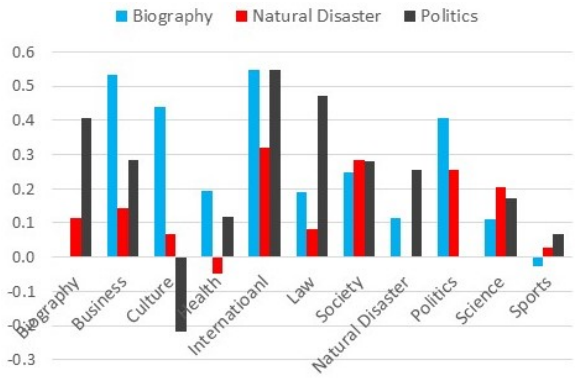

Figure 3: Similarity among the transformation matrices (we set the self similarity scores to 0).

learning-based summarization approaches. Different classifiers have been explored, including Conditional Random Field (**?**), Support Vector Regression (**?**) and Logistic Regression (**?**), etc.

Recently, the application of deep neural network techniques has attracted more and more interest in the summarization research. (**?**) used unsupervised auto-encoders to represent both manual and system summaries for summary evaluation. Their method , however, did not surpass ROUGE. (**?**; **?**) tried to use neural networks to complement sentence ranking features. Although the models achieved the state-of-the-art performance, they still relied on hand-crafted features. A few researches explored to directly measure similarity based on distributed representations. (**?**) trained a language model based on convolutional neural networks to project sentences onto distributed representations. (**?**) treated single document summarization as a sequence labeling task and modeled it by recurrent neural networks. Others like (**?**) simply used the sum of trained word embeddings to represent sentences or documents. In addition to extractive summarization, deep learning technologies have also been applied to compressive and abstractive summarization (**?**; **?**).

Conclusion and Future Work

In this paper, we propose a novel summarization system called TCSum, which leverages text classification to improve the performance of summarization. Extensive experiments on DUC generic summarization benchmark datasets show that TCSum achieves the state-of-the-art performance, even without using any hand-crafted features. We also observe that TCSum indeed catches the variations of summary styles among different text categories. We believe our model can be used to other summarization tasks including query-focused summarization and guided summarization. In addition, we plan to let the model distinguish documents in a topic cluster, which is better adapted to the multi-document summarization.

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