Advancing Legal Judgment Summarization

Integrating SUMO and ASMO with Novel Features

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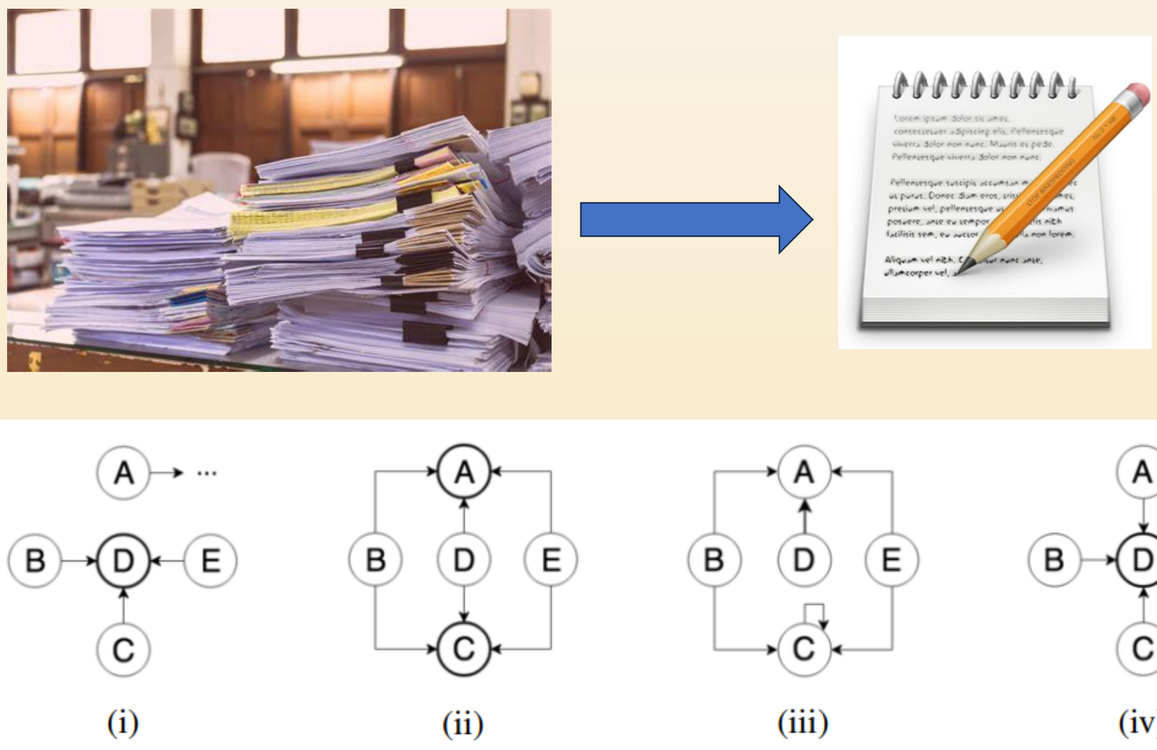
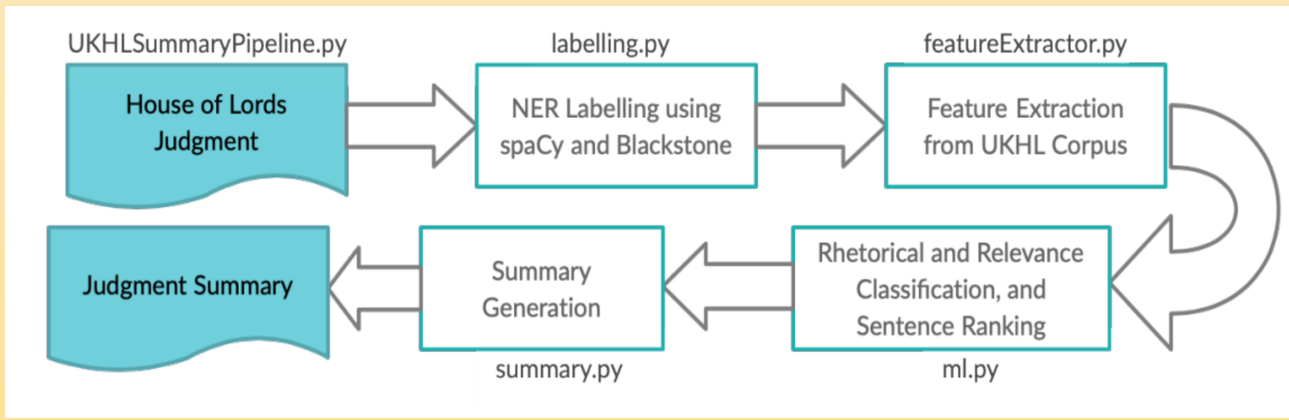
Introduction

Legal judgments in the UK are intricate documents, often dense with technical legal arguments, making their manual summarization a time-consuming task. To address this challenge, automated summarization systems have emerged as a valuable tool, offering instantaneous access to concise summaries of cases. In this context, our study integrates two systems, SUMO (SUmmarisation with Majority Opinion) and ASMO (agreement statements (AS) and MO), to advance the process of legal judgment summarization. Building upon this foundation, we introduce new functionalities aimed at enhancing user adaptability across diverse legal cases. Our approach empowers users to apply SUMO and ASMO to various new cases, facilitating efficient and accurate summarization. By incorporating novel features, we aim to improve the accessibility and utility of automated summarization systems in the UK legal landscape. Whether legal practitioners seeking efficient case analysis or individuals seeking a clearer understanding of legal proceedings, our system offers tailored assistance.

Methods

Our research integrates SUMO system, combining the methods from Hachey and Grover's SUM system and incorporating Valvoda et al.'s ASMO system to identify the majority opinion in legal judgments. Additionally, we allow user input by enabling them to provide a link to a specific case on Bailli's website. We retrieve and process the text using Beautiful Soup, then pass it through ASMO to extract relevant features. Furthermore, we modify the parameters of existing models and introduce new models to replace the manually annotated features in the original training data. We utilize Conditional Random Fields for semantic role and relevance classification of sentences, achieving higher classification accuracy compared to previous methods. Moreover, we employ a combination of extractive and abstractive techniques, incorporating sentence ranking tasks to generate summaries closely resembling the existing manual standards.





Results

rhetorical classifier

Classifier	F-score
DTC	0.5892
SVC	0.5210
LR	0.5135
NB	0.3997
KN	0.4634
RF	0.5792

Relevance classifier

DTC(P)	DTC(R)	DTC(F)	RF(P)	RF(R)	RF(F)
0.341	0.341	0.355	0.326	0.591	0.427

MO Classifier

Model/ System	ASMO	Average Expert	No Consensus MO	Single Most Cited Judge	Most Mentioned Judge in AS	Judges with Longer Opinions	Single Judge with Most Sentences
Accuracy (%)	81	91	29	38	48	43	48

Conclusions

our study successfully addressed the challenge of automated legal judgment summarization. By integrating SUMO and ASMO systems, we enhanced the efficiency and accuracy of summarization tasks. Despite the removal of Blackstone's feature set, our system maintained robust performance, as evidenced by the achieved F-score means. This research contributes to advancing the accessibility and understanding of UKHL judgments, setting a new benchmark for automated summarization systems in the legal domain.

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