

# Chapter 1

## Sentiment–Based Summarization of Legal Documents Using Natural Language Processing (NLP) Techniques

**Shyamala Devi N.**

 <https://orcid.org/0000-0003-4413-4775>

*VISTAS Chennai, India*

**Grace Hannah J.**

 <https://orcid.org/0000-0002-9997-3157>

*Vels Institute of Science, Technology, and Advanced Studies, India*

### **ABSTRACT**

*This Chapter discusses the application of Natural Language Processing (NLP) in the legal domain for entity identification and the generation of hierarchy-based applications. NLP techniques, such as Named Entity Recognition (NER) and information extraction, are utilized to analyse legal documents, extract key information, and understand contextual relationships. The integration of NLP facilitates tasks such as legal document summarization, contract analysis, automated document generation, and legal research, thereby enhancing the efficiency and accuracy of legal processes. The creation of hierarchical structures within documents, language translation, sentiment analysis, and compliance monitoring further contribute to the comprehensive utilization of NLP in the legal field. The abstract highlights the transformative impact of NLP in streamlining legal workflows, improving information retrieval, and ensuring compliance with evolving legal standards. Most judicial systems in*

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*the world, centered around the Supreme Court as the highest-level court, grapples with a substantial caseload, receiving over 7,500 cases annually but hearing fewer than 150. The Supreme Court's unique role in interpreting the constitutionality of laws and establishing precedents underscores its significant influence. Challenges arise from the overwhelming caseload, leading to increased use of plea bargains and potential concerns about justice. To address these issues, a proposed research initiative suggests employing machine learning and natural language processing to accelerate Supreme Court decisions, aiming to uncover pivotal aspects that greatly influence the outcomes, and enhance our comprehension on India legal system's functioning and constraints. This chapter presents a methodology for sentiment-based summarization of legal documents using Natural Language Processing (NLP) techniques. The process involves pre-processing the text, conducting sentiment analysis to label sentences as positive, negative, or neutral, and then summarizing the document while incorporating the identified sentiments. Special attention is paid to legal-specific considerations such as terminology and context.*

## **INTRODUCTION**

The domain of law, is one field where professionals are required to review, analyse and make inference from among large volumes of dossier and files. This document-intensive field therefore necessitates a legal counsel to engage with diverse judicial opinions, regulatory documents and capacious data that is to be unsheathed from diverse sources. This sift of dossier extraction and reviewing of documents can be exhaustive, time-consuming and therefore lead to manual inaccuracies. The Indian judicial system, most often circumscribed by the rubrics and functioning of Supreme Court as the highest-level court, is loaded with substantial cases, with colossal pending cases that are annually accumulated. However, the quotidian hearing routine is most often fixed to a maximum of 150 to 200 cases. The Supreme Court's unique role in interpreting the constitutionality of laws and establishing precedents underscores its significant influence. Challenges arise from the overwhelming caseload, leading to increased use of plea bargains and potential concerns about justice. While judicial documents can entail complex patterns of text and domain-relevant jargons, it can be arduous in effectively parsing the texts through traditional compiler and parsing techniques. To address these issues, a proposed research initiative suggests employing machine learning and natural language processing to facilitate ease of decision boundaries. This process through simulative techniques can explicitly aid

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