

Foundations for Territorial Disambiguation in Law: A Preliminary Study using the Education Act 2005

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Abstract. In the devolved legal system of the United Kingdom (UK), legislative provisions may apply differently across regions such as England, Wales, Scotland, and Northern Ireland. Accurately determining this territorial scope is essential for legal interpretation and AI-assisted legal tools. However, metadata capturing jurisdictional applicability is inconsistently format, as only a few Acts include Territorial Application Annexes. This study presents a case study using the Education Act 2005 to evaluate the accuracy of automated methods for identifying territorial scope. We found that only 46.9% of sections matched in jurisdictional coverage. The best-performing approach achieved nearly 80% accuracy, showing that LLMs can effectively support scalable and explainable territorial disambiguation.

Keywords. Territorial Disambiguation, Legal—DocML, Large Language Models

1. Introduction

Legislation in the UK operates under a devolved structure, dividing authority between England, Wales, Scotland, and Northern Ireland. Determining where a provision applies—its territorial scope—is vital for legal interpretation and compliance automation. The National Archives provides statutes in Akoma Ntoso XML (LegalDocML) format, using <extent> tags to indicate territorial coverage. However, these are often incomplete or overly general, leading to ambiguity. The Education Act 2005, which includes a detailed Territorial Application Annex, offers a unique opportunity to assess and improve territorial metadata extraction using AI-based methods.

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2. Methodology

The study used the Education Act 2005 as a benchmark for testing different approaches to territorial classification. Each section of the Act was extracted from its LegalDocML XML version and paired with the official Territorial Application Annex, which served as ground truth. Four automated methods were tested: 1) baseline extent tag matching, 2) NER-based detection of jurisdictional entities, 3) LLM-based classification, and 4) LLM-based classification enhanced with domain-specific knowledge (e.g., identifying 'Secretary of State' as English authority or 'Estyn' as Welsh). The LLMs used were DeepSeek-R1:8B and DeepSeek-R1:32B.

3. Results and Discussion

The baseline extent tag approach achieved 46.9% accuracy, revealing that current meta-data does not reliably represent territorial scope. NER improved performance to 61.7%, while the LLM-based methods achieved 63–73% accuracy. When enriched with legal knowledge, accuracy reached nearly 80%. These results demonstrate that combining structured context and simple legal cues can significantly improve AI-based territorial inference. However, manually embedding knowledge in prompts is not scalable, emphasizing the need for integrating legal knowledge graphs in future research.

4. Conclusion and Future Work

Manual identification of territorial applicability in UK legislation is slow and challenging due to nuanced legal language and cross-references. This study shows that AI models can analyse statutory text to suggest likely territorial scope, reducing dependence on manually crafted annexes. Future work will focus on exploring more techniques to add external knowledge and enhancing interpretability so that each AI-generated decision is supported with clear reasoning and can be easily verified.

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