Explanatory Visualization with LLMs for Employment Law

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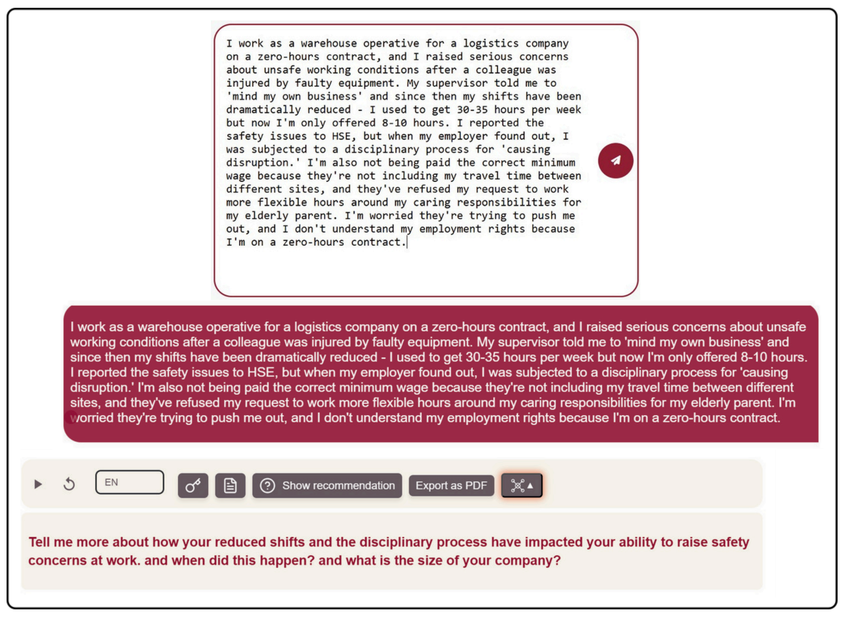
Legal pathways often go unseen by those who need them the most. Our ongoing AI visualization research aims to convert complex procedures into straightforward, interactive maps, enabling citizens to confidently navigate the justice system in England and Wales.

Overview & Objectives

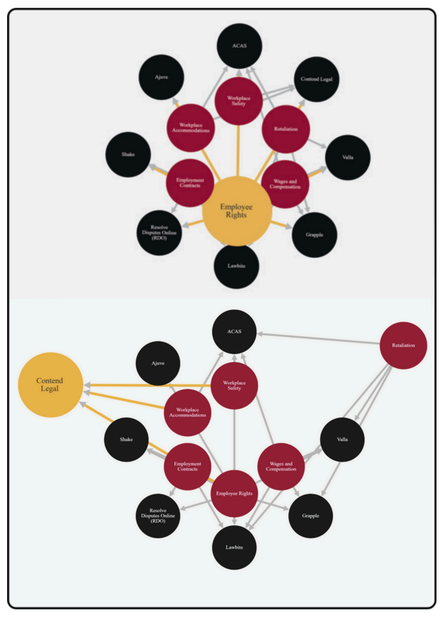
Navigating legal processes is daunting without legal expertise. Our vision is that through visualization and artificial intelligence (AI) we can make the law and legal processes more accessible and understandable for everyone. This work focuses on employment law where we have developed an AI system to help diagnose employment issues in England and Wales and signpost to appropriate Online Dispute Resolution (ODR) tools. Our applications of visualization are two-fold. First, to help users visually navigate the law and second, to help clarify how AI arrives at its recommendations. This work focuses on the latter. By developing AI-powered legal visualization systems that diagnose public law issues through conversational AI interactions, we have the potential to improve access to justice. Our system provides legal summaries with relevant legislation for England and Wales, recommends ODR tools to facilitate resolution ranked by relevance, and presents visualizations to explain the reasoning of the AI system. The diagram below shows a typical user workflow.

a User Scenario and Conversation with LLM



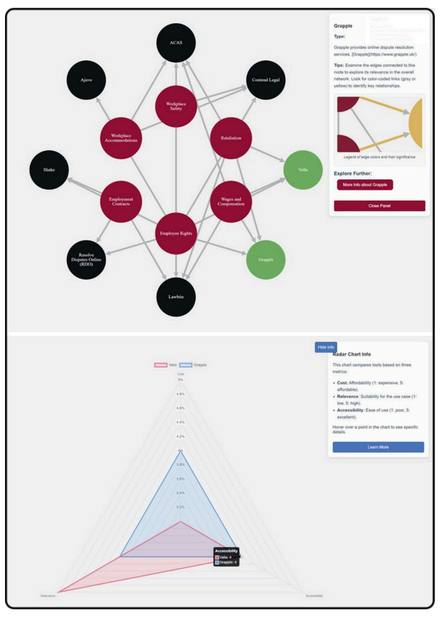
A user will first explain an employment issue they are facing. The system then determines if the context of the query is relevant, classifies their response to the appropriate legal category in England and Wales, and responds with targeted follow-up questions.

b Mapping Legal Areas and ODR Tool Relevance



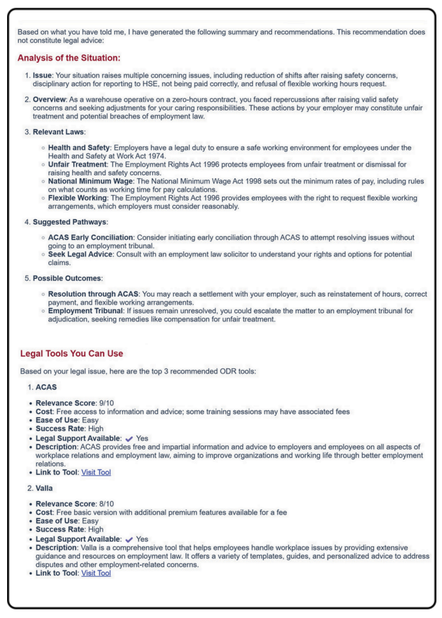
Our visualizations show the AI system's reasoning with a node-link diagram where relevant **legal categories** are linked to relevant **ODR tools** via directed edges. Highlights appear in **yellow**.

c Comparing ODR Tools with Visual Analytics



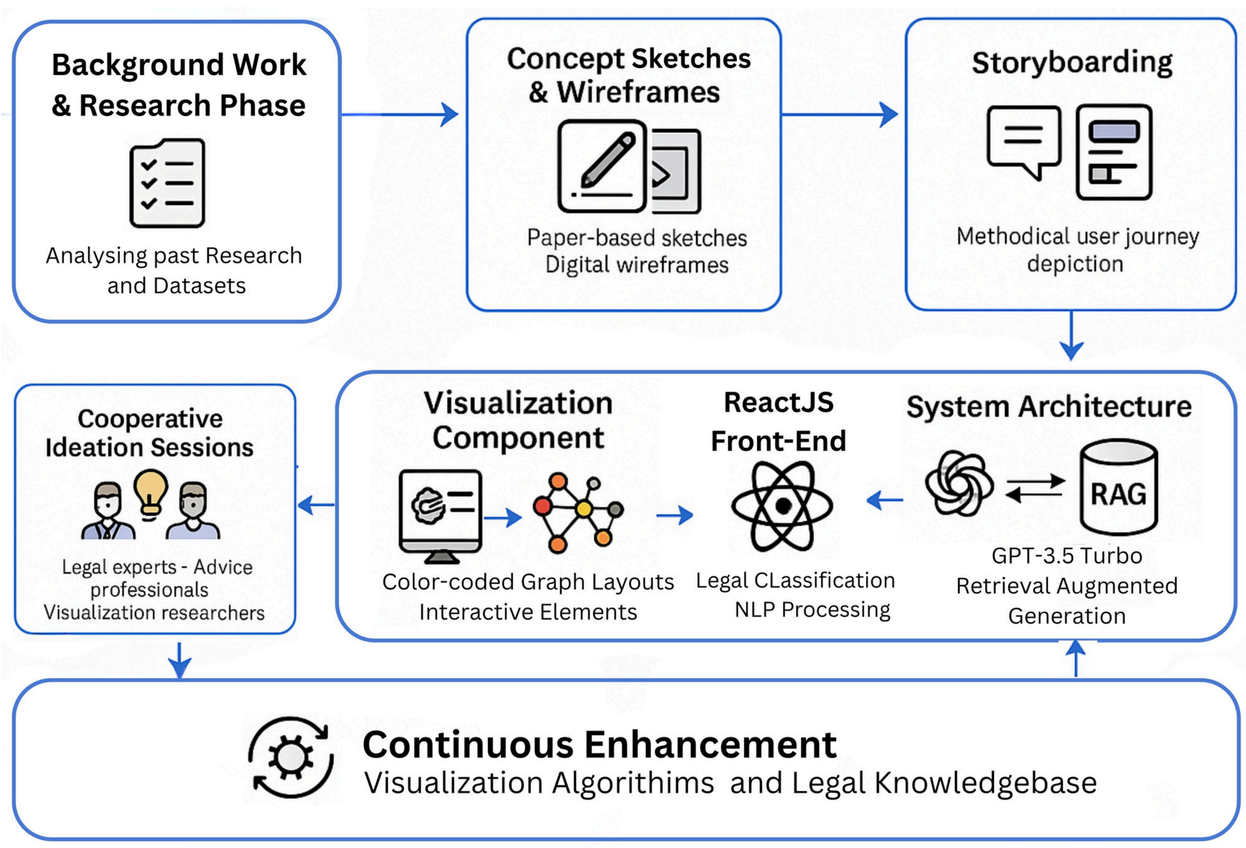
Users can **select** nodes to explore further details including the relevance, cost, and accessibility of each ODR tool, presented in a radar chart.

d Summary and Tailored Legal Recommendations



The user then receives a summary of the conversation including actionable information with links and explanations for each of their options.

EmployODR System Overview



Summary & Future Work

The EmployODR system combines Large Language Models (LLM) with a Retrieval Augmented Generation (RAG) approach using a chatbot interface and jurisdictionally-constrained responses and visualization. Our prototype triages a user's legal issue; however, challenges remain in representing common law concepts and handling multi-domain legal issues.

Future work will further explore explanatory visualization for employment law and integrate explainable AI techniques for better transparency. We aim to extend our approach to other legal domains and run further design and user studies to validate our approach.

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