

Software Lab:

Modeling:	<input type="checkbox"/>
Mathematics:	<input type="checkbox"/>
Programming:	<input type="checkbox"/>
Science:	<input type="checkbox"/>

JudgmentExplorer - A Framework for Digital, Intuitive, and Case-Specific Evaluation of Court Rulings in the Building Permit Process

Description

The increasing complexity of court rulings and decisions in construction planning law, building codes, and administrative law often poses significant challenges for caseworkers involved in building permit procedures. This project proposes the development of **JudgmentExplorer**, a digital framework that organizes, preprocesses, and provides intuitive, case-specific evaluation of relevant court rulings. By integrating legal data with construction application parameters, such as location, zoning requirements, building components, building types, and structural requirements, the tool aims to enhance decision-making efficiency and accuracy. In addition to aiding caseworkers, JudgmentExplorer will also benefit applicants by allowing them to anticipate potential legal obstacles during the planning phase, thereby streamlining the application process and fostering better compliance. The framework will leverage state-of-the-art machine learning (ML) and natural language processing (NLP) methods for semantic search and data alignment, while utilizing legal databases such as www.rechtsprechung-im-internet.de and/or equivalent international resources.



Tasks

Literature Review

Explore relevant fields, including legal informatics, construction informatics, and administrative workflows.

Data Collection and Annotation

Gather court rulings and annotate key legal and construction parameter (what are relevant and comparable factors?)

Algorithm Development

Leverage ML and NLP-based (or other) methods to identify comparable reference cases from court decisions and compare them with building application data (e.g. in which cases could similar exceptions be supported such as exceeding the clearance area)

Implementation and Validation

Test the framework with real-life sample cases

Supervisor

Judith Fauth, Chair of Computational Modeling and Simulation, judith.fauth@tum.de

References

Here comes: all references used above (please do not forget to include image references if necessary!)