



Dissertation Defense
Doctor of Philosophy in Intelligent Systems

“An Automatic Personalized End-to-End Legal Summarization System” by **Huihui Xu**

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Place: 6106 Sennott Square, 3810 Forbes Ave, Pittsburgh PA
15260

Committee:

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- Dr. Diane Litman, Professor, Intelligent Systems and Computer Science, University of Pittsburgh
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Abstract:

Personalized legal summarization for individuals' interests allows legal professionals and the public to understand the complex legal reasoning. The lengthy legal case opinions can be hard for readers to peruse and find information of interest. Summarizing legal opinions using traditional Natural Language Processing (NLP) methods can be challenging because legal domain expertise is required to train different models for varied use cases. Besides, summary quality evaluation is also difficult because it often requires humans to compare generated and reference summaries.

In this dissertation, I propose to design an automatic legal summarization system that can generate personalized legal summaries to help people understand lengthy legal case opinions. The purpose of this project is to increase access to justice by developing and evaluating an end-to-end automatic personalized legal summarization (APEELS) system. The nature of long legal case opinions often poses a barrier to quick and efficient decision making for legal professionals and the public. APEELS will address this inefficiency by providing concise, high-quality, and personalized summaries of legal cases for people with different needs. Using my previous work on legal argument mining and summarization as a guide, my dissertation project is based on the structure and semantic nature of legal case opinions to identify salient information of legal opinions. The work can be seen as a real application where both traditional NLP methodologies and Large Language Models (LLMs) are adopted. Summary quality evaluation is also part of this system to ensure the generated summary is useful for individual preferences.