Expert Finding in Legal Community Question Answering

A lawyer

There is a need to find lawyer

based on the expertise for a

greatest when they work in

lawyer's impact is the

their expert field.

case of an applicant since the

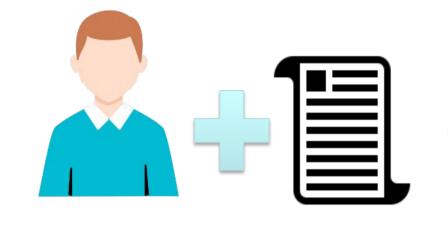


Arian Askari, Suzan Verberne, Gabriella Pasi
Leiden University and University of Milano-Bicocca
{a.askari, s.verberne}@liacs.leidenuniv.nl gabriella.pasi@unimib.it





Problem



An Applicant

A problem that should be solved legally in court by hiring a lawyer

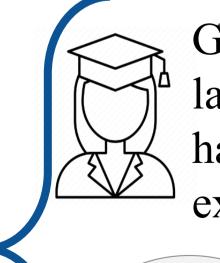
- There are no studies on expert finding in the legal domain.
- Differences with other domains in terms of expertise and authority, and content:
 - Asker knows almost nothing about the law
 - Answerer is a lawyer (professional user)
 - Content is a combination of formal and informal language and it may contain emotional language

Result & Insights

Model	MAP	MRR	P@1	P@5	P@10
Model 1 LM	22.8 %	40.9 %	23.9 %	19.7 %	13.2 %
Model 1 BM25	3.7 %	7.0 %	2.9 %	1.4 %	2.6 %
Model 2 LM	19.4 %	21.9 %	13.5 %	12.7 %	7.8 %
Model 2 BM25	21.0 %	36.6 %	22.5 %	18.3 %	11.5 %
VBD	37.3 %	70.7 %	60.5 %	55.6 %	25.9 %
VBD + Profiles (Weighted)	39.3 %	73.2 %	64.9 %	57.1 %	27.7 %

- Model 1: Candidate Level
- Model 2: Document Level
- Vanilla BERT Document-based (VBD): We re-rank experts' answers by a pretrained BERT model with a linear combination layer stacked atop (VBD) the classifier using Model 2 BM25 as initial ranker.
- The weights of profiles:
 - Comments > Recency > Sentiment positive >
 Sentiment Negative

Proposed Method



Goal: Find a lawyer that have specific expertise

All Lawyers' Answers

- (1) Comment-based: concatenate of comments on lawyer's responses
- (2) Recency-based: concatenate of latest responses by the lawyer
- (3,4) Sentiment-Based: we create two profiles based on positive sentences and negative sentences in lawyer's responses

Compute relevance score per profile using VBD Compute score by weighting

Model 2 BM25 — Re-rank by VBD

Dataset

• Our dataset has been scraped from the Avvo QA forum. **Avvo** is a legal online platform where anyone could post their legal problem for free and receive responses from lawyers.