ISM@FIRE-2013 Information Access in The Legal Domain

Ambedkar Kanapala
Sukomal Pal

Department of Computer Science & Engineering
Indian School of Mines Dhanbad, India

Contents

- Introduction

- FIRE Tasks

- Approach

- Result

- Conclusion

- References

Introduction

- Adhoc retrieval : A task in which user specifies information need through query which initiates a search for documents which are likely to be relevant

FIRE-Tasks

- Adhoc retrieval from Legal Document

  - Consumer law

  - Hindu marriage & divorce law

- Identification and Classification of Propositions in Court Judgment

  - Parse each judgment into individual propositions

  - Classification of propositions

Approach

- We have used indri tool for the Adhoc retrieval from legal documents

Adhoc retrieval from Legal Document

▪ Indexing Parameter File

```
<parameters>
<corpus>
<path>/home/Firedata/LegalAdhocTask/</path>
<class>trectext</class>
</corpus>
<index>/media/DSK1_VOL2/lemurtask</index>
<indexType>inv</indexType>
<memory>128000000</memory>
<position>true</position>
</parameters>
```

Cont..

- Retrival Parameter File(Consumer law)

```
<parameters>
<index>/media/DSK1_VOL2/lemurtask</index>
<query>
<type>indri</type>
<text>
 #combine(I have bought Samsung galaxy y duos pro phone a month ago
from Croma Baroda.After coming home when I checked the phone I found
that its microphone was not working.I took this mobile back to Croma
Baroda for replacement as it was manufacturing defect.Croma people were
not ready to change the phone but they wanted seven more days to get
confirmation from Samsung for changing theinstrument.Samsung is also not
ready to accept their mistake They are ready to repair it but not ready to
change the instrument What should I do now)
  </text>
</query>
<trecFormat>true</trecFormat>
</parameters>
```

Cont..

- Retrival Parameter File(Hindu marriage & divorce law)

```
<parameters>
<index>/media/DSK1_VOL2/lemurtask</index>
<query>
<type>indri</type>
<text>
 #combine(My friend is in love with a married man, and they want to get
married and live together.The problem is that her boyfriend is willing to
marry her but not willing to divorce his first wife.Is it possible to marry again
without divorcing his first wife My friend does not mind her boy friend not
divorcing his first wife.All she wants is that he marries her and lives with her
that all.Is it possible to have a legally valid marriage)
  </text>
</query>
<trecFormat>true</trecFormat>
</parameters>
```

Results

▪ Adhoc retrieval from Legal Document(Consumer Law)

Team	Run Number	Mean Average Precision	
		Focused Corpus	Overall Corpus
EVORA	Run 1	0.1627	0.1489
EVORA	Run 2	0.2186	0.2159
ISM	**Run 1**	**0.1995**	**0.1413**

Identification and Classification of Propositions in Court Judgment

- Parse each judgment into individual propositions
- Classification of propositions

Algorithm: Parse each judgment into individual propositions

Input: Given text file. (para wise judgement text data)
Output: Segmented text file (converted para wise data into individual propositions)

Step 1: Read the given text file para by para
Step 2: Specify the new sentence starting and ending character sequences
    2.1. Split the para if the character sequence ends with *end of string* or with *punctuation mark (e.g . period)*
    2.2. split the para if the first character is *non white space*.
    (e.g. . The High Court)
Step 3: do not split the string in the following cases
    3.1. there may be inner punctuation ([.])
    3.2. not followed by white space (/t,\n)
    3.3. zero or more special characters (!,?)
    3.4. optional closing quotes(" ",' ')
    3.5. there are some special characters ends with dot. (Like Mr. SMT. ORS.)
Step 4: write all the collected individual propositions to output file.
Step 5: end.

Conclusion

- Adhoc retrieval from Legal Document

    - Consumer Law : satisfactory

    - Hindu Marriage & Divorce Law

- Identification and Classification of Propositions in Court Judgment

    - Parse each judgment into individual proposition

    - Classification of propositions

Future work

- Further we will work on different models for Adhoc retrieval

  (e.g.-VSM,OKAPI models)

- Parse each judgment into individual propositions

- In future we would like to work on Classification of propositions

References

[1] Cristopher D.Manning, Prabhakar Raghawan, Hinrich Schutze- An introduction to information retrieval, Cambridge University press 2008.

[2] K. Tamsin Maxwell and Burkhard Schafer. 2008. Concept and Context in Legal Information Retrieval. In Proceedings of the 2008 conference on Legal Knowledge and Information Systems: JURIX 2008: The Twenty-First Annual Conference, Enrico Francesconi, Giovanni Sartor, and Daniela Tiscornia (Eds.). IOS Press, Amsterdam, The Netherlands, The Netherlands, 63-72.

[3] www.isical.ac.in/~fire/ (as on 20.11.2013)

[4] http://ciir.cs.umass.edu/~metzler/indriretmodel.html(as on 20.11.2013)

References(contd…)

[5] www.lemurproject.org. (as on 20.11.2013)

[6] http://sourceforge.net/p/lemur/wiki/Quick%20Start/(as on 20.11.2013)

[7] Ponte, J. M. and Croft, W. B., "A language modeling approach to information retrieval," Proceedings of the 21st Annual international ACM SIGIR Conference on Research and Development in information Retrieval (SIGIR '98), 275-281, 1998.

[8] Turtle, H. and Croft, W.B.,"Evaluation of an Inference Network-Based Retrieval Model," ACM Transactions on Information System, in 9(3),187-222, 1991.

THANK YOU!!