

7. Conclusions

This paper presents an approach and an ongoing effort towards building a collection of clinical scenarios (that serve as topics of interest), combined with documents automatically retrieved to augment the scenarios with evidence, and expert judgments on the relevance of retrieved documents to the clinical scenario. The benefits of the proposed approach are in the relatively low cost and minimal supervision in construction of the collection, as well as obtaining expert judgments at the point of care.

Some of the drawbacks of the approach are in slow rate of obtaining judgments, sparseness of judgments and lack of reasons for judgments. The last two issues have been extensively studied in the context of TREC (Voorhees and Harman, 2005), but might need re-evaluation in the context of clinical applications. We plan to speed up the collection process through using the system in EBP educational sessions at the clinical center. During the sessions we hope not only to obtain more relevance judgments faster, but also to capture reasoning behind the judgments.

We are less concerned about the quality of obtained judgments – those are provided by members of tightly-knit teams for other members with the purpose of improving provided care, therefore we expect high-quality judgments.

8. Acknowledgements

This work was supported by the Intramural Research Program of the NIH, National Library of Medicine.

9. References

- Aphinyanaphongs Y, Tsamardinos I, Statnikov A, Hardin D, Aliferis CF. (2005). Text Categorization Models for High-Quality Article Retrieval in Internal Medicine. *Journal of the American Medical Informatics Association*, 12(2), pp. 207--216.
- Aronson AR. (2001) Effective mapping of biomedical text to the UMLS Metathesaurus: the MetaMap program. *Proc AMIA Symp*, pp. 17-21.
- Aronson AR, Mork JG, Neveol A, Shooshan SE, Demner-Fushman D. (2008). Methodology for Creating UMLS Content Views Appropriate for Biomedical Natural Language Processing. In *Proceedings of the Annual Symposium of the American Medical Informatics Association (AMIA)*. Washington, DC: AMIA, pp. 21--25.
- Bond CS. (2007). Nurses and computers. An international perspective on nurses' requirements. *Medinfo*, 12(1), pp. 228--232.
- Cimino JJ. (2007). An integrated approach to computer-based decision support at the point of care. *Transactions of the American Clinical and Climatological Association*, 118, pp. 273--288.
- Demner-Fushman D, Lin J. (2007). Answering Clinical Questions with Knowledge-Based and Statistical Techniques. *Computational Linguistics*, 33(1) pp. 63--103.
- Demner-Fushman D, Seckman C, Fisher C, Hauser SE, Clayton J, Thoma GR. A Prototype System to Support Evidence-based Practice. *AMIA Annu Symp Proc*. 2008 Nov 6:151-5.
- Ely JW, Osheroff JA, Chambliss ML, Ebell MH, Rosenbaum ME. (2005) Answering physicians' clinical questions: obstacles and potential solutions. *Journal of the American Medical Informatics Association*, 12(2), pp. 217--224.
- Goldberg D, Nichols D, Oki BM, Terry D. (1992) Using collaborative filtering to weave an information tapestry, *Communications of the ACM*, 35 (12), pp. 61—70
- Humphrey SM, Rogers WJ, Kilicoglu H, Demner-Fushman D, Rindfleisch TC. (2005). Word Sense Disambiguation by Selecting the Best Semantic Type Based on Journal Descriptor Indexing: Preliminary Experiment. *Journal of the American Society for Information Science and Technology*, 57(1), pp. 96--113.
- Ide NC, Loane RF, Demner-Fushman D. Essie: a concept-based search engine for structured biomedical text. *J Am Med Inform Assoc*. 2007 May-Jun;14(3):253-63.
- Jose JM, Joho H, van Rijsbergen CJ. (2008). Adaptive Information Retrieval, *Information Processing & Management*, 44(6), pp. 1819—1821
- Lindberg DA, Humphreys BL, McCray AT. (1993) The Unified Medical Language System. *Methods of information in medicine*, 32(4), pp. 281--291.
- Maviglia SM, Yoon CS, Bates DW, Kuperman G. (2006). KnowledgeLink: impact of context-sensitive information retrieval on clinicians' information needs. *Journal of the American Medical Informatics Association*, 13(1), pp. 67--73.
- McCray AT, Burgun A, Bodenreider O. Aggregating UMLS semantic types for reducing conceptual complexity. *Stud Health Technol Inform*. 2001;84(Pt 1): 216--20.
- Richardson W, Wilson MC, Nishikawa J, Hayward RSA. (1995). The well-built clinical question: a key to evidence-based decisions. *ACP Journal Club*, 123, pp. A-12.
- Roberts PM, Cohen AM, Hersh WR. (2009). Tasks, topics and relevance judging for the TREC Genomics Track: five years of experience evaluating biomedical text information retrieval systems. *Information Retrieval*, 12(1), pp. 81 -- 97.
- Rosenbloom ST, Geissbuhler AJ, Dupont WD, Giuse DA, Talbert DA, Tierney WM, Plummer WD, Stead WW, Miller RA. (2005). Effect of CPOE user interface design on user-initiated access to educational and patient information during clinical care. *Journal of the American Medical Informatics Association*, 12(4), PP. 458--473.
- Voorhees EM, Harman DK. (2005). *TREC: Experiment and Evaluation in Information Retrieval*. Cambridge, MA: The MIT Press