

Question Answering System Approaches: A Review

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Abstract: *Data is increasing in volume day by day, this data can be processed and classified into various categories. Users all over the internet ask tons of questions to which they want precise answers. The Question Answering system is the best solution in such scenarios. Traditional approach mainly focuses on providing the documents which include the keywords related to the query asked by the users. While the question answering approach provides a better alternative by further refining the results, it not only returns the related documents but also retrieves the most relevant answer from the available corpus of data. Converting the questions asked by the users into an appropriate query string, classifying the question, retrieving the documents and extracting the valid answer are the main steps involved in this system.*

Keywords: Question answering system, Natural language processing, Information retrieval, Question Classification, QA system Approaches

REFERENCES

- [1]. Green BF, Wolf AK, Chomsky C, and Laughery K. Baseball: An automatic question answerer. In Proceedings of Western Computing Conference, Vol. 19, 1961, pp. 219–224.
- [2]. Woods W. Progress in Natural Language Understanding - An Application to Lunar Geology. In Proceedings of AFIPS Conference, Vol. 42, 1973, pp. 441–450.
- [3]. Weizenbaum J. ELIZA - a computer program for the study of natural language communication between man and machine. In Communications of the ACM, Vol. 9(1), 1966, pp. 36-45.
- [4]. Bobrow DG, Kaplan RM, Kay M, Norman DA, Thompson H, and Winograd T. Gus, a frame-driven dialog system. Artificial Intelligence, Vol. 8(2), 1977, pp. 155-173.
- [5]. Clark P, Thompson J, and Porter B. A knowledge-based approach to question answering. In Proceedings of AAAI'99 Fall Symposium on Question-Answering Systems, 1999, pp. 43-51.
- [6]. <http://start.csail.mit.edu/index.php>
- [7]. Mishra A, Mishra N, Agrawal A. Context-aware restricted geographical domain question answering system. In Proceedings of IEEE International Conference on Computational Intelligence and Communication Networks (CICN), 2010, pp. 548-553.
- [8]. Riloff E and Thelen M. A Rule-based Question Answering System for Reading Comprehension Tests. In ANLP /NAACL Workshop on Reading Comprehension Tests as Evaluation for Computer-Based Language Understanding Systems, Vol. 6, 2000, pp. 13-19.
- [9]. Ittycheriah A, Franz M, Zhu WJ, Ratnaparkhi A and Mammone RJ. IBM's statistical question answering system. In Proceedings of the Text Retrieval Conference TREC-9, 2000.
- [10]. Cai D, Dong Y, Lv D, Zhang G, Miao X. A Web-based Chinese question answering with answer validation. In Proceedings of IEEE International Conference on Natural Language Processing and Knowledge Engineering, pp. 499-502, 2005.
- [11]. Soricut R and Brill E. Automatic question answering using the web: Beyond the factoid. In Journal of Information Retrieval-Special Issue on Web Information Retrieval, Vol. 9(2), 2006, pp. 191-206.
- [12]. Suzuki J, Sasaki Y, Maeda E. SVM answer selection for open domain question answering. In Proceedings of 19th International Conference on Computational linguistics, COLING'02, Vol. 1, 2002, pp. 1-7.
- [13]. Moschitti A. Answer filtering via text categorization in question answering systems. In Proceedings of the 15th IEEE International Conference on Tools with Artificial Intelligence, 2003, pp. 241-248.

- [14]. Zhang K, Zhao J. A Chinese question answering system with question classification and answer clustering. In Proceedings of IEEE International Conference on Fuzzy Systems and Knowledge Discovery (FSKD), Vol.6,2010, pp. 2692-2696.
- [15]. Ravichandran D and Hovy E. Learning surface text patterns for a question answering system. In proceeding of 40th Annual Meeting on Association of Computational Linguistics, 2002, pp. 41-47.
- [16]. Soubbotin MM and Soubbotin SM. Patterns of Potential Answer Expressions as Clues to the Right Answer. In Proceeding of the TREC-10, NIST, 2001, pp. 175-182.
- [17]. Zhang D and Lee WS. Web based pattern mining and matching approach to question answering. In Proceedings of the 11th Text Retrieval Conference,2002.
- [18]. Greenwood M. and Gaizauskas R. Using a Named Entity Tagger to Generalise Surface Matching Text Patterns for Question Answering. In Proceedings of the Workshop on Natural Language Processing for Question Answering(EACL03), 2003, pp. 29-34.
- [19]. Cui H, Kan MY and Chua TS. Soft pattern matching models for definitional question answering. In ACM Transactions on Information Systems (TOIS), Vol. 25(2):8, 2007.
- [20]. Saxena AK, Sambhu GV, Kaushik S, and Subramaniam LV. Iitd-ibmirl system for question answering using pattern matching, semantic type and semantic category recognition. In Proceedings of the TREC, Vol. 2007,2007.
- [21]. Sneiders E. Automated question answering using question templates that cover the conceptual model of the database. In Natural Language Processing and Information Systems, Springer Berlin Heidelberg, 2002,pp. 235-239.
- [22]. Gunawardena T, Lokuhetti M, Pathirana N, Ragel R,Deegalla S. An automatic answering system with template matching for natural language questions. In Proceedings of 5th IEEE International Conference on Information and Automation for Sustainability (ICIAFs),2010, pp. 353-358.
- [23]. Unger C, Böhmann L, Lehmann J, Ngonga Ngomo AC, Gerber D and Cimiano P. Template-based question answering over RDF data. In Proceedings of the ACM 21st international conference on World Wide Web, 2012,pp. 639-648.
- [24]. Prud'hommeaux E, Seaborne A(eds.). SPARQL Query Language for RDF. <http://www.w3.org/TR/rdf-sparql-query/>, 2007.
- [25]. Kwok C, Etzioni O and Weld DS. Scaling question answering to the Web. ACM Transactions on Information Systems (TOIS), Vol.19 (3), 2001, pp. 242-262.
- [26]. Ramakrishnan G, Chakrabarti S, Paranjpe Dand Bhattacharya P. Is question answering an acquired skill?. In Proceedings of the 13th ACM international conference on World Wide Web, 2004, pp. 111-120.
- [27]. Xia L, Teng Z, and Ren F. An Integrated Approach for Question Classification in Chinese Cuisine Question Answering System. In IEEE second International Symposium on Universal Communication, 2008, pp.317-321.
- [28]. Lee YH, Lee CW, Sung CL, Tzou MT, Wang CC, Liu SH, Shih CW, Yang PY and Hsu WL. Complex question answering with ASQA at NTCIR-7 ACLIA. In Proceedings of NTCIR-7 Workshop Meetings, Entropy,1, 10, 2008.
- [29]. Ferrucci D, Brown E, Chu-Carroll J, Fan J, Gondek D, Kalyanpur AA, Lally A et al. Building Watson: An overview of the DeepQA project. AI magazine 31, no. 3,2010, pp. 59-79.
- [30]. M., Ajitkumar, Khillare S.A., and C. Namrata. "Question Answering System, Approaches and Techniques: A Review." International Journal of Computer Applications 141.3 (2016): 34–39. Web.