## Sentiment analysis for Vietnamese

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Abstract: Sentiment analysis is one of the most important tasks in Natural Language Processing. Research in sentiment analysis for Vietnamese is relatively new and most of current work only focus in document level. In this paper, we address this problem at the sentence level and build a rule-based system using the Gate framework. Experimental results on a corpus of computer products reviews are very promising. To the best of our knowledge, this is the first work that analyzes sentiment at sentence level in Vietnamese. © 2010 IEEE.

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## References:

- Cunningham, H., Maynard, D., Bontcheva, K., Tablan, V., GATE, A framework and graphical development environment for robust NLP tools and applications (2002) Proceedings of the 40th Anniversary Meeting of the Association for Computational Linguistics (ACL'02), Philadelphia, July 2002
- Church, K.W., Hanks, P., Word association norms, mutual information and lexicography (1989) Proceedings of the 27th Annual Meeting of the Association for Computational Linguistics 1989, pp. 76-83., Vancouver, B.C., Canada
- Day, D., McHenry, C., Kozierok, R., Riek, L., Callisto: A configurable annotation workbench (2004) Proceedings of the Fourth International Conference on Language Resources and Evaluation. (LREC 2004), , ELRA. May, 2004
- Ding, X., Liu, B., Zhang, L., Entity discovery and assignment for opinion mining applications (2009) Proceedings of the 15th ACM SIGKDD International Conference on Knowledge Discovery and Data Mining
- Fellbaum, C., (1998) WordNet: An Electronic Lexical Database, MIT Press
- Ganapathibhotla, M., Liu, B., Mining opinions in comparative sentences (2008) Proceedings of the 22nd International Conference on Computational Linguistics
- Hatzivassiloglou, V., McKeown, K.R., Predicting the semantic orientation of adjectives (1997) Proceedings of the 8th Conference on European Chapter of the Association for Computational Linguistics, , 1997, Madrid, Spain
- Hu, M., Liu, B., Mining and summarizing customer reviews (2004) Proceedings of the 10th ACM SIGKDD International Conference on Knowledge Discovery and Data Mining, Aug. 22-25, 2004, Seattle, WA, USA
- Kao, A., Poteet, S.R., (2006) Natural Language Processing and Text Mining, April. Chapter 2
- Manning, C., Schutze, H., (1999) Foundations of Statistical Natural Language Processing, , MIT Press, Cambridge, MA
- Nasukawa, T., Yi, J., Sentiment analysis: Capturing favorability using natural language processing (2003) Proceedings of the 2nd International Conference on Knowledge Capture
- Neff, M.S., Byrd, R.J., Boguraev, B.K., The talent system: TEXTRACT architecture and data model (2003) Proceedings of the HLT-NAACL2003 Workshop on Software Engineering and Architecture of Language
- Pang, B., Lee, L., Vaithyanathan, S., Thumbs up? Sentiment classification using machine learning techniques (2002) Proceedings of the 7th Conference on Empirical Methods in Natural Language Processing (EMNLP-02)
- Pham, D.D., Tran, G.B., Pham, S.B., A hybrid approach to vietnamese word segmentation using part of speech tags (2009) International Conference on Knowledge and Systems Engineering
- Turney, P.D., Mining the Web for Synonyms: PMI-IR versus LSA on TOEFL (2001) LECTURE NOTES IN COMPUTER SCIENCE, (2167), pp. 491-502. Machine Learning: ECML 2001
- Turney, P., Thumbs up or thumbs down? Semantic orientation applied to unsupervised classification of reviews (2002) Proceedings of the 40th Annual Meeting of the Association for Computational Linguistics (ACL-02), pp. 417-424., Jun. 2002, Philadelphia, PN, USA