## Named entity recognition for Vietnamese

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Abstract: Named Entity Recognition is an important task but is still relatively new for Vietnamese. It is partly due to the lack of a large annotated corpus. In this paper, we present a systematic approach in building a named entity annotated corpus while at the same time building rules to recognize Vietnamese named entities. The resulting open source system achieves an F-measure of 83%, which is better compared to existing Vietnamese NER systems. © 2010 Springer-Verlag Berlin Heidelberg.

Index Keywords: F-measure; In-buildings; Named entities; Named entity recognition; NER system; Open source system; Database systems; Open systems; Natural language processing systems

Year: 2010

Source title: Lecture Notes in Computer Science (including subseries Lecture Notes in Artificial Intelligence

and Lecture Notes in Bioinformatics)

Volume: 5991 LNAI

Issue: PART 2
Page: 205-214
Link: Scorpus Link

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Sponsors: Hue University; Wroclaw University of Technology

Conference name: 2010 Asian Conference on Intelligent Information and Database Systems, ACIIDS 2010

Conference date: 24 March 2010 through 26 March 2010

Conference location: Hue City

Conference code: 80259

ISSN: 3029743 ISBN: 9.78E+12

DOI: 10.1007/978-3-642-12101-2\_22 Language of Original Document: English

Abbreviated Source Title: Lecture Notes in Computer Science (including subseries Lecture Notes in

Artificial Intelligence and Lecture Notes in Bioinformatics)

Document Type: Conference Paper

Source: Scopus

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## References:

- Bikel, D., Miller, S., Schwartz, R., Weischedel, R., A High- Performance learning namefinder (1998) Proceedings of the Fifth Conference on Applied Natural Language Processing, pp. 194-201
- Borthwick, A., Sterling, J., Agichtein, E., Grishman, R., Exploiting diverse knowledge sources via maximum entropy in named entity recognition (1998) Proceedings of the Sixth Workshop on Very Large Corpora Montreal Canada
- Budi, I., Bressan, S., Association rules mining for name entity recognition (2003) Proceedings of the Fourth International Conference on Web Information Systems Engineering
- Nguyen, V.T.T., Cao, T.H., Automatic extraction of vietnamese named-entities on the web (2007) Proceedings of the Journal of New Generation Computing, Ohmsha, Ltd. Springer
- Fang, X., Sheng, H., A hybrid approach for chinese named entity recognition (2002) Proceedings of the Fifth International Conference on Discovery Science
- Kim, J., Kang, I., Choi, K., Unsupervised named entity classification models and their ensembles (2002) Proceedings of the Nineteenth International Conference on Computational Linguistics
- Mai, T.D., (2008) Named Entity Guideline for Vietnamese, , Bachelor thesis, College of Technology, Vietnam National University, Hanoi
- Mansouri, A., Affendey, L., Mamat, A., Named entity recognition using a new fuzzy support vector machine (2008)
   Proceedings of the International Journal of Computer Science and Network Security, IJCSNS, 8 (2), pp. 320-325
- Maynard, D., Tablan, V., Ursu, C., Cunningham, H., Wilks, Y., Named entity recognition from diverse text types (2001) Proceedings Recent Advances in Natural Language Processing 2001 Conference, Tzigov Chark, Bulgaria
- Maynard, D., Bontcheva, K., Cunningham, H., Towards a semantic extraction of named entities (2003) Proceedings Recent Advances in Natural Language Processing Borovets Bulgaria
- Nguyen, T.C., Tran, O.T., Phan, H.X., Ha, T.Q., Named entity recognition in vietnamese free-text and web documents using conditional random fields (2005) Proceedings of the Eighth Conference on Some Selection Problems of Information Technology and Telecommunication, Hai Phong Viet Nam
- Nguyen, T.P., Vu, L.X., Nguyen, H.M.T., Nguyen, H.V., Le, P.H., Building a large syntactically-annotated corpus of vietnamese (2009) Proceedings of the Third Linguistic Annotation Workshop (LAW) at ACL-IJCNLP 2009
- Pastra, K., Maynard, D., Hamza, O., Cunningham, H., Wilks, Y., How feasible is the reuse of grammars for named entity recognition? (2002) Proceedings of the Conference on Language Resources and Evaluation, LREC 2002
- Pham, T., Kawazoe, A., Dinh, D., Collier, N., Construction of vietnamese corpora for named entity recognition (2007) Conference RIAO 2007, Pittsburgh PA, U.S.A, May 30- June 1
- Pham, D.D., Tran, G.B., Pham, S.B., Vietnamese word segmentation using part of speech tags (2009) Proceedings of the First International Conference on Knowledge and Systems Engineering Hanoi Vietnam
- Srihari, R., Niu, C., Li, W., A hybrid approach for named entity and sub-type tagging (2000) Proceedings of the Sixth Conference on Applied Natural Language Processing
- Wu, Y.-C., Fan, T.-K., Lee, Y.-S., Yen, S.-J., Extracting named entities using support vector machines (2006) Lecture Notes in Computer Science (including subseries Lecture Notes in Artificial Intelligence and Lecture Notes in Bioinformatics), 3886

LNBI, pp. 91-103. , Knowledge Discovery in Life Science Literature - PAKDD 2006 International Workshop, KDLL 2006, Proceedings