Quarterly (March, June, September, December)
160pp. per issue
6 3/4 x 10
Founded: 1974
2018 Impact Factor: 1.319
2018 Google Scholar h5-index: 32
ISSN: 0891-2017
E-ISSN: 1530-9312

Journal Resources
Editorial Info
Abstracting and Indexing
Release Schedule
Advertising Info

Probabilistic Top-Down Parsing and Language Modeling

Brian Roark

Posted Online March 13, 2006
https://doi.org/10.1162/089120101750300526

Computational Linguistics
Volume 27 | Issue 2 | June 2001
p.249-276

Abstract Authors

This paper describes the functioning of a broad-coverage probabilistic top-down parser, and its application to the problem of language modeling for speech recognition. The paper first introduces key notions in language modeling and probabilistic parsing, and briefly reviews some previous approaches to using syntactic structure for language modeling. A lexicalized probabilistic top-down parser is then presented, which performs very well, in terms of both the accuracy

of returned parses and the efficiency with which they are found, relative to the best broad-coverage statistical parsers. A new language model that utilizes probabilistic top-down parsing is then outlined, and empirical results show that it improves upon previous work in test corpus perplexity. Interpolation with a trigram model yields an exceptional improvement relative to the improvement observed by other models, demonstrating the degree to which the information captured by our parsing model is orthogonal to that captured by a trigram model. A small recognition experiment also demonstrates the utility of the model.

Author Resources

Submission Guidelines
Publication Agreement
Author Reprints

Reader Resources

Rights and Permissions
Most Read
Most Cited

More About Computational Linguistics

Metrics

99

99 Total citations
4 Recent citations
17 Field Citation Ratio
n/a Relative Citation Ratio

Open Access

Computational Linguistics
Computational Linguistics is Open Access. All content is freely available in

Forthcoming

Most Read

See More

Lexicon-Based Methods for Sentiment Analysis (14087 times)
Maite Taboada et al.
Computational Linguistics
Volume: 37, Issue: 2, pp. 267-307

Computational Linguistics and Deep Learning (10542 times)
Christopher D. Manning
Computational Linguistics
Volume: 41, Issue: 4, pp. 701-707

Near-Synonymy and Lexical Choice (3675 times)
Philip Edmonds et al.
Computational Linguistics
Volume: 28, Issue: 2, pp. 105-144

(Note that the Most Read numbers are based on the number of full text downloads over the last 12 months.)

Most Cited

See More

Lexicon-Based Methods for Sentiment Analysis (436 times)
Maite Taboada et al.
Computational Linguistics
Volume: 37, Issue: 2, pp. 267-307

A Systematic Comparison of Various Statistical Alignment Models (174 times)
Franz Josef Och et al.
Computational Linguistics
Volume: 29, Issue: 1, pp. 19-51

Opinion Word Expansion and Target Extraction through Double Propagation (147 times)
Guang Qiu et al.
Computational Linguistics
Volume: 37, Issue: 1, pp. 9-27

(Note that the Most Cited numbers are based on Crossref's Cited-by service and reflect citation information for the past 24 months.)

electronic format (Full text HTML, PDF, and PDF Plus) to readers across the globe. All articles are published under a CC BY-NC-ND 4.0 license. For more information on allowed uses, please view the CC license. Support OA at MITP