

Cambridge Elements =

Elements in Corpus Linguistics edited by Susan Hunston University of Birmingham

CONDUCTING SENTIMENT ANALYSIS

Lei Lei Shanghai Jiao Tong University Dilin Liu The University of Alabama





CAMBRIDGEUNIVERSITY PRESS

University Printing House, Cambridge CB2 8BS, United Kingdom One Liberty Plaza, 20th Floor, New York, NY 10006, USA 477 Williamstown Road, Port Melbourne, VIC 3207, Australia 314–321, 3rd Floor, Plot 3, Splendor Forum, Jasola District Centre, New Delhi – 110025, India

103 Penang Road, #05–06/07, Visioncrest Commercial, Singapore 238467

Cambridge University Press is part of the University of Cambridge.

It furthers the University's mission by disseminating knowledge in the pursuit of education, learning, and research at the highest international levels of excellence.

www.cambridge.org Information on this title: www.cambridge.org/9781108829212 DOI: 10.1017/9781108909679

© Lei Lei and Dilin Liu 2021

This publication is in copyright. Subject to statutory exception and to the provisions of relevant collective licensing agreements, no reproduction of any part may take place without the written permission of Cambridge University Press.

First published 2021

A catalogue record for this publication is available from the British Library.

ISBN 978-1-108-82921-2 Paperback ISSN 2632-8097 (online) ISSN 2632-8089 (print)

Additional resources for this publication at www.cambridge.org/sentimentanalysis.

Cambridge University Press has no responsibility for the persistence or accuracy of URLs for external or third-party internet websites referred to in this publication and does not guarantee that any content on such websites is, or will remain, accurate or appropriate.



Conducting Sentiment Analysis

Elements in Corpus Linguistics

DOI: 10.1017/9781108909679 First published online: August 2021

Lei Lei Shanghai Jiao Tong University Dilin Liu The University of Alabama

Author for correspondence: Dilin Liu, dliu@ua.edu

Abstract: This Element provides a basic introduction to sentiment analysis, aimed at helping students and professionals in corpus linguistics to understand what sentiment analysis is, how it is conducted, and where it can be applied. It begins with a definition of sentiment analysis and a discussion of the domains where sentiment analysis is conducted and used the most. Then, it introduces two main methods that are commonly used in sentiment analysis known as "supervised machine-learning" and "unsupervised learning (or lexicon-based)" methods, followed by a step-by-step explanation of how to perform sentiment analysis with R. The Element then provides two detailed examples or cases of sentiment and emotion analysis, with one using an unsupervised method and the other using a supervised learning method.

Keywords: corpus linguistics, lexicon-based, sentiment analysis, supervised machine-learning, unsupervised machine-learning

© Lei Lei and Dilin Liu 2021

ISBNs: 9781108829212 (PB), 9781108909679 (OC) ISSNs: 2632-8097 (online), 2632-8089 (print)



Contents

1	Sentiment Analysis: Background	1
2	Methods for Sentiment Analysis	14
3	How to Do Sentiment Analysis with R	21
4	Case Study 1: A Diachronic Analysis of Sentiments and Emotions in the State of the Union Addresses	61
5	Case Study 2: A Sentiment and Emotion Analysis of Movie Reviews	78
6	Conclusion: Where We Are and Where We Are Heading	94
	References	97