

Mining high quality insights in social media data using machine learning methods

Early Trend Detection on Twitter

Scientific report

Course of Studies: Information Technology

University of applied sciences Karlsruhe

by

Lukas Masuch Henning Muszynski Benjamin Raethlein

Due Date: 30. January 2015

Student (Id): Lukas Masuch (CHANGE)

Student (Id): Henning Muszynski (50170)

Student (Id): Repiemin Poetblein (CHANGE)

Student (Id): Benjamin Raethlein (CHANGE)

Academic Supervisor: Prof. Dr. Norbert Link

Academic Supervisor: Dr. Ingo Schwab

Declaration of Authorship

We declare that we entirely by ourselves have developed and written the enclosed report and have not used sources or means without declaration in the text. Any thoughts or quotations which were inferred from these sources are clearly marked as such.

This report was not submitted in the same or in a substantially similar version to any other authority to achieve an academic grading and was not published elsewhere. This report has been submitted exclusively to the University of Applied Sciences Karlsruhe.

(Lukas Masuch)	
(Henning Muszynski)	
(Renjamin Raethlein)	

Abstract

Contents

Αŀ	brev	riations	V
Lis	st of	Figures	VI
List of Tables			
Lis	st of	Listings	VIII
1	Intr	oduction	1
	1.1	Motivation	. 1
	1.2	Objectives	. 1
	1.3	Overview	. 1
2	The	eoretical Background	2
	2.1	Big Data	. 2
	2.2	Social Media	. 2
	2.3	Machine Learning	. 2
	2.4	Data Mining	. 2
	2.5	Trends	. 2
3	Use	Cases	3
	3.1	General Use Cases	. 3
	3.2	Stock Market Prediction	. 3
	3.3	Flu Trend Prediction	. 3
4	Earl	ly Trend Detection on Twitter	4
	4.1	Related Work	. 4
5	Con	iclusion and Future Work	5
Α	Add	litional Tables and Graphics	7

Abbreviations

List of Figures

List of Tables

List of Listings

Todo list

1 Introduction

- 1.1 Motivation
- 1.2 Objectives
- 1.3 Overview

2 Theoretical Background

- 2.1 Big Data
- 2.2 Social Media
- 2.3 Machine Learning
- 2.4 Data Mining
- 2.5 Trends

3 Use Cases

- 3.1 General Use Cases
- 3.2 Stock Market Prediction
- 3.3 Flu Trend Prediction

4 Early Trend Detection on Twitter

4.1 Related Work

5 Conclusion and Future Work

APPENDIX

A Additional Tables and Graphics