



UNIVERSIDADE
CATÓLICA
PORTUGUESA

BRAGA

Behavior Analysis Technologies

Session 1

Course Introduction

Applied Data Science

2024/2025

Course Objectives

- Understand and apply key concepts of **opinion and sentiment analysis**;
- Develop proficiency in using various technological **tools and platforms** for **text mining** and **sentiment analysis**;
- Integrate multiple **analytical tools** to create comprehensive **data-driven insights** for decision-making.

Classes

- **Thursdays | 14:30 - 16:30**
- **Fridays | 09:00 - 11:00**
- **Theory Session**
 - **Focus:** Foundations of Behavior Analysis Technologies, including concepts of opinion and sentiment analysis.
- **Hands-On Session**
 - **Focus:** Hands-on exploration of text mining and sentiment analysis tools and techniques applied to real-world data.

Evaluation

	% of Final Course Grade
Exam	30%
Text Mining Python Project	35%
Sentiment Analysis Dashboard in Power BI Project	35%

Opinion and Sentiment Analysis

- **Opinion Analysis:**

- The process of extracting **subjective information** from text.
- It goes beyond just identifying whether the sentiment is **positive, negative** or **neutral**.
- It can include identifying the **target** of the opinion, the **strength of the opinion**, and the **emotions involved**.



Opinion and Sentiment Analysis

- **Sentiment Analysis:**

- A subset of opinion analysis focused on identifying **emotions** and **attitudes**.



Positive or negative movie review?



- A heartwarming film with great performances and a feel-good story. It leaves you smiling!
- Disappointing and dull. The plot was weak, and the characters were uninteresting. Not worth the watch.
- Oh, what a masterpiece! If you enjoy endless clichés and predictable plots, this film is a true gem. You'll be on the edge of your seat—wondering why you bothered.

Google Product Search



HP Officejet 6500A Plus e-All-in-One Color Ink-jet - Fax / copier / printer / scanner

\$89 online, \$100 nearby ★★★★★ 377 reviews




September 2010 - Printer - HP - Inkjet - Office - Copier - Color - Scanner - Fax - 250 sh

Reviews

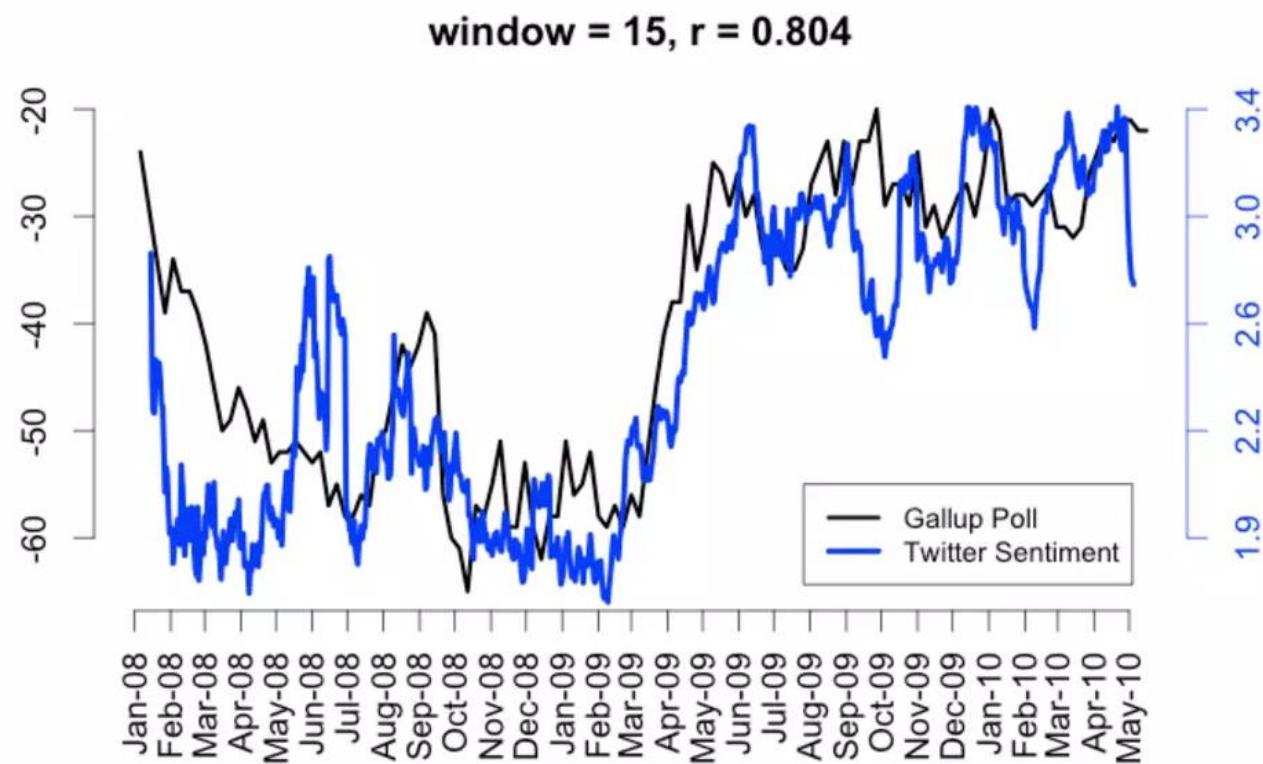
Summary - Based on 377 reviews



What people are saying

ease of use		"This was very easy to setup to four computers."
value		"Appreciate good quality at a fair price."
setup		"Overall pretty easy setup."
customer service		"I DO like honest tech support people."
size		"Pretty Paper weight."
mode		"Photos were fair on the high quality mode."
colors		"Full color prints came out with great quality."

Twitter Sentiment vs Consumer Confidence



Source: Brendan O'Connor, Ramnath Balasubramanyan, Bryan R. Routledge, and Noah A. Smith. 2010. From Tweets to Polls: Linking Text Sentiment to Public Opinion Time Series. In ICWSM-2010

Why Organizations Use Sentiment Analysis?

- **Customer Feedback:** Understanding consumer opinions



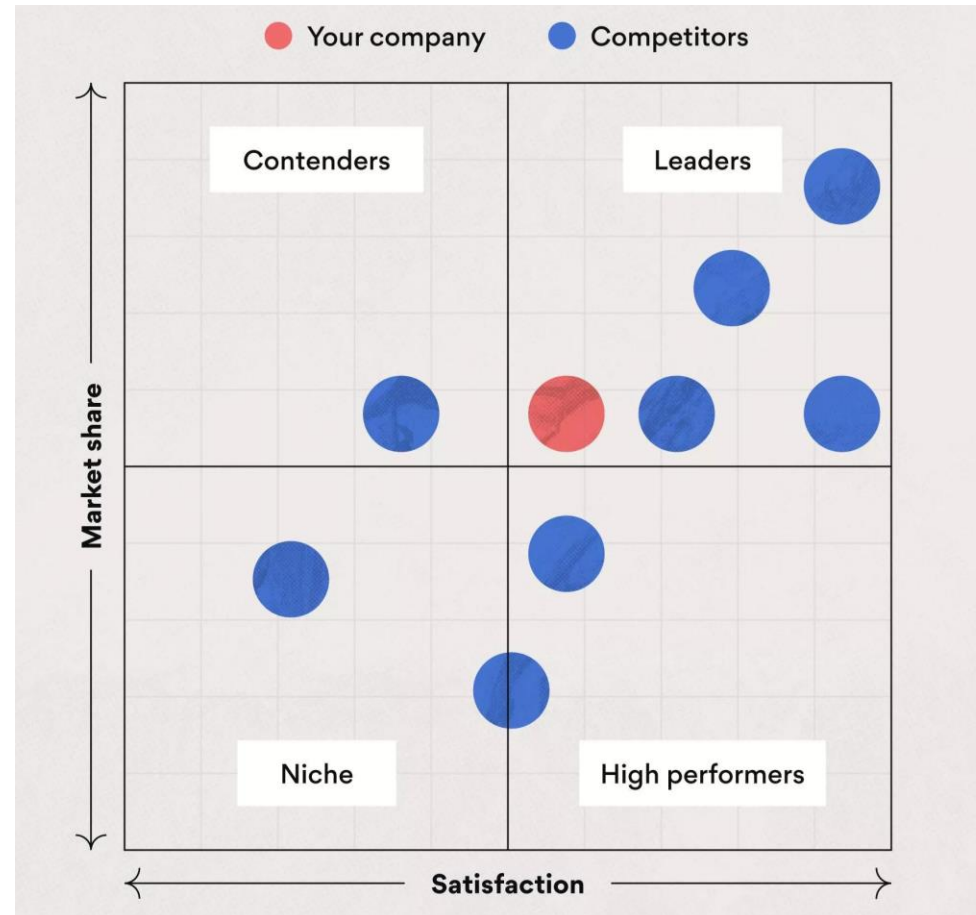
Why Organizations Use Sentiment Analysis?

- **Brand Monitoring:** Tracking brand reputation



Why Organizations Use Sentiment Analysis?

- **Competitive Analysis:** Analyzing how competitors are perceived



Why Organizations Use Sentiment Analysis?

- **Product Improvement:** Gathering insights for product development





About this Course

- We will focus mainly on these three topics:
 - **Text Retrieval**
 - **Text Mining**
 - **Sentiment Analysis**

Contact

- For all course-related matters you can contact me:
 - joacorreia@ucp.pt
 - OR
 - Jfscorreia95@gmail.com

GitHub SetUp

- Lectures will be provided both on GitHub and Moodle.
 - <https://github.com/LCDA-UCP/tac-hands-on>
- You will need to fork the repository and then clone it to your local machine.
- Setup a python/conda environment and install the requirements.
 - `$ pip install -r requirements.txt`