# Reddit Multi-Dimensional Sentiment Visualization

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## Problem

This project studies ways to estimate and visualize sentiments for Reddit, a social news aggregation, web content rating, and discussion website. We have developed a chrome extension for people to see and understand readers’ emotional reactions by extracting, aggregating, and visualizing sentiment properties embedded in the text.

## Motivation

It’s challenging to understand other people’s emotional reactions at a glance when reading discussions, comments, reviews online. Our specific goal is to enable people to:

- Understand the sentiment of Reddit threads quickly
- Search and browse the posts associated with a specific emotion easily

**Challenges:**

- High dimensionality of text data
- Provide relevant context to aid understanding
- Match analysis tasks with appropriate tools and language models
- Visualize multi-dimensional sentiment

## Approach

### Tools & Language Models:

- IBM Watson: AlchemyAPI's sentiment analysis API
- D3
- EC2
- node.js
- Chrome Extension tool kit

### Visualization:

- 5 sentiment dimensions: joy, sadness, anger, fear, disgust
- 3 levels of text visualization support:
  - Text selection: bar chart
  - Single Reddit thread: bar chart
  - Multiple Reddit threads: stacked bar chart

### Interaction:

- Sort by emotion magnitude
- Filter by emotion
- Chrome context integration
- Go to thread from visualization

## RESULTS

### Single thread sentiment analysis:

![Single thread sentiment analysis](image)

### Aggregated sentiment analysis & facet filtering:

![Aggregated sentiment analysis & facet filtering](image)

## Future Work

- Multi-facet filter
- Runtime improvement
- Extend aggregation feature to all news aggregators, web content rating, and discussion forums
- Support customized emotion scheme