Problem

- Understanding customers and their levels of satisfaction
- Scores and text reviews of products are evolving over time
- Reasons are not always clear to the owners, investors and analysts
- Analyst goal: find out why and when changes in the reviews occurred
- Data source: Platforms for user-generated opinions, such as Yelp, contain millions of reviews

Analyst Questions

- Why did review scores change at a particular time for a particular item?
- Are there items with a contrary trend over time?
- What are topics that are affecting all items over all time?
- What distinguishes an excellently scored item from a poorly scored item?

Method

- Review Watcher: Lightweight tool, capable of loading millions of review data entries.
- Develop a visual interface to indicate changes in review scores over different periods of time.
- Utilise automated natural language processing algorithms to highlight important words in text reviews
- Combine visualisation of temporal score changes with textual changes
- Qualitative evaluation and user study with experts

Results

- Review Watcher detail view showing word cloud with the most common lemmas from reviews, showing a matrix of review scores changing over time and the ability to search reviews based on their content, all for one restaurant.
- Review Watcher main page showing the top 20 most popular restaurants, arranged by average review scores.
- Review Watcher detail view lets users explore restaurant changing reviews on a yearly basis. Getting words that are only common for a specific time period and score is shown.
- The overall time users wanted to spend using Review Watcher compared to the time spent with a baseline tool.

'First, you go here for the view of the Bellagio fountains. Which is really good if you get a table outside and can stand the heat.'

extracting lemmas

'go', 'view', 'bellagio', 'fountain', 'really', 'good', 'get', 'table', 'outside', 'stand', 'heat'