SFU
SIMON FRASER UNIVERSITY
ENGAGING THE WORLD

PATENTS AS TECHNOLOGY INNOVATION & MARKET VALUE INDICATOR

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1. BACKGROUND & MOTIVATION

Our Project

We created **a comprehensive patent evaluation program** which allows users to get meaningful insights and values from patent datasets.

Motivation

#1 Many firms want to buy patents for R&D, investment

#2 Firms evaluate market value of patents by following many lenghty processes

#3 As number of patents drastically increases, it takes too much time, cost, effort for measuring the market values

2. WHAT QUESTIONS TO ANSWER?

We wanted to construct **a comprehensive patent evaluation program and we divided as two main analysis**

Patent Topic Analysis

01 Find patents with high similarity

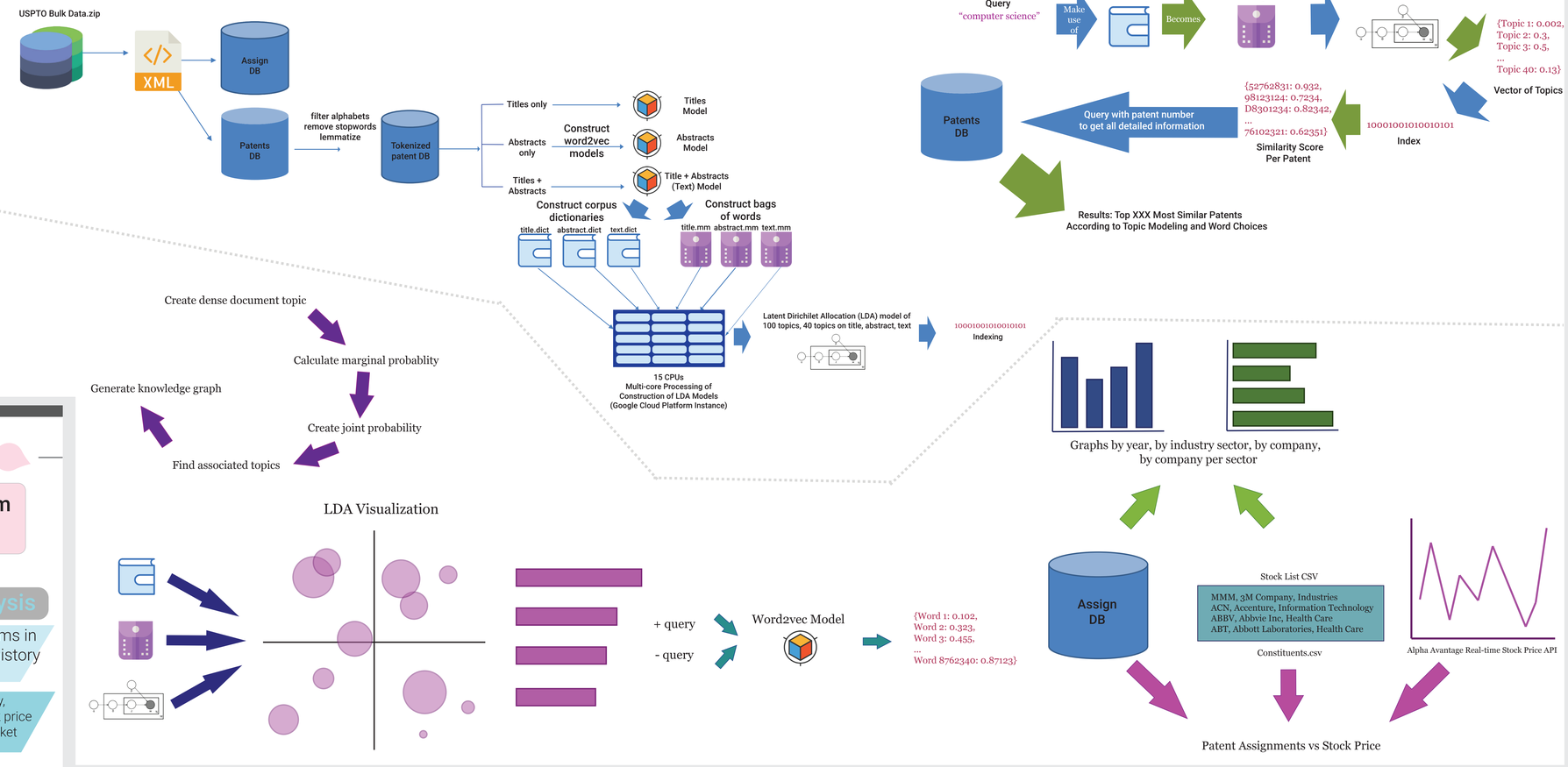
02 Search for overall trend (popularity) of patent topics by industry sectors

Patent Market Transaction Analysis

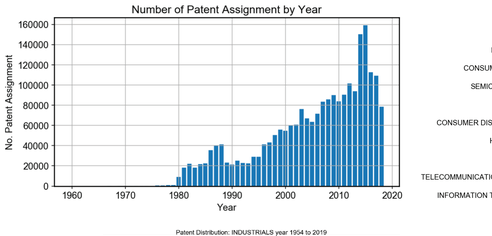
01 Find the most influential firms in patent market transaction history by industry

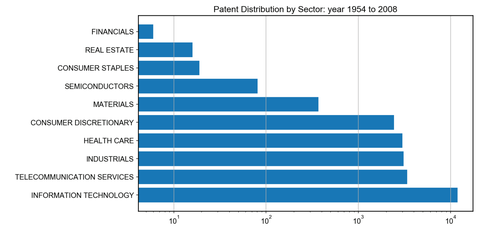
02 For each influential company, analyze the relation of daily stock price and the each firm's patent market transaction history

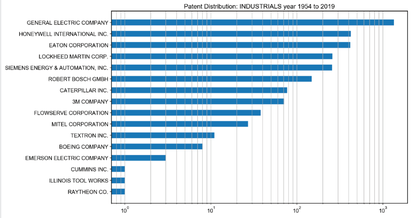
3. METHODOLOGY

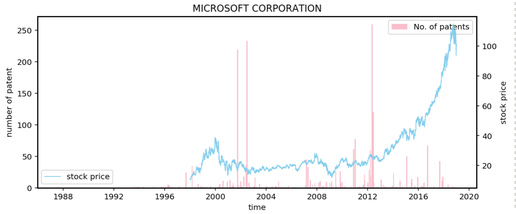


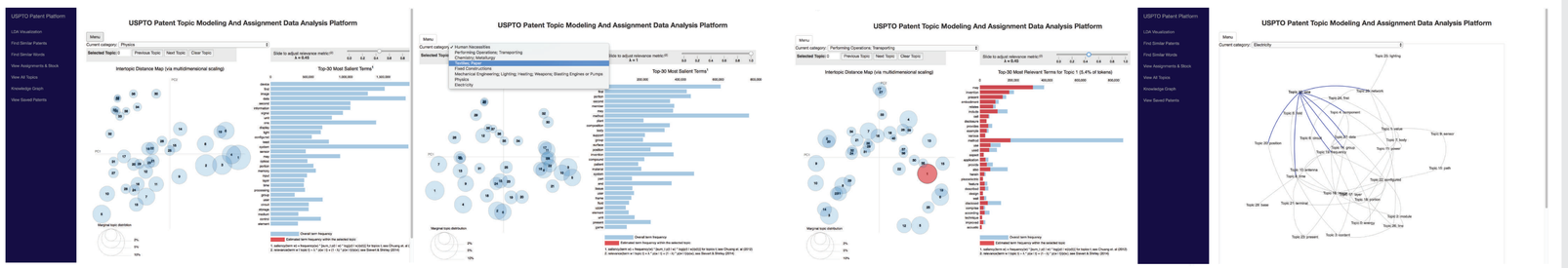
4. RESULTS

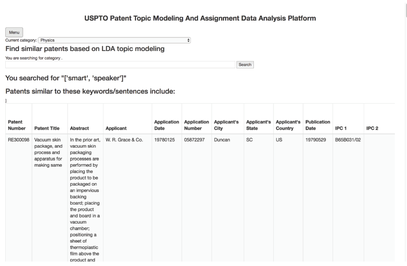


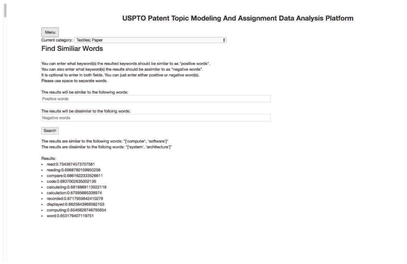


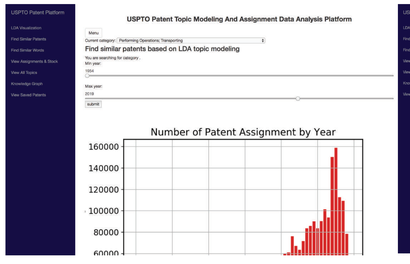


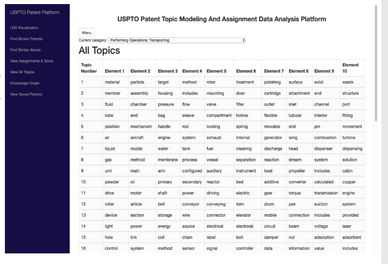












Learning

- Successfully combined different sources (USPTO Bulk Data, Stock Market API, etc.) to produce meaningful integrated database
- Learnt how to construct LDA models and visualization from bag of words and word2vec models
- Learnt how to crawl and bulk download data, and parse them by constructing automatic tool that reads the XML structure effectively through buffer
- Learnt how to build Flask frontend using pretrained models to find similar documents and words in real time and show Matplotlib graphs on the frontend
- Learnt how to visualize data in the same chart from different tables and sources

Future Work

We would like to work on more specific industry focused work. Particularly, we are interested in biosimilar industry (which produces biologic medical product that is almost an identical copy of an original product)

As biosimilairs are manufactured when the original product's patent expires,the role of patents is cruicial in this industry.