

CS5346 Assignment 3 - CIRViz

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1 Introduction

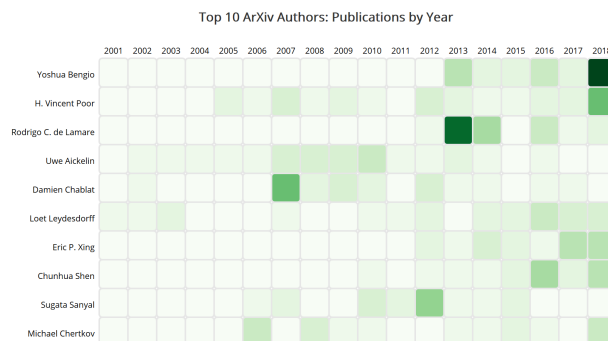
The assignment teaches students to handle big data, either by filtering it or cleaning it, and then handling it to extract insights or to explore. In this assignment we split the work into two main portions; exploration of the data, and coding the final visualizations. For exploration we used Tableau with a small dataset to examine any interesting trends, and for the final visualization we used C3.js on top of D3.js to render with the full dataset.

2 Visualizations - Purpose and Method

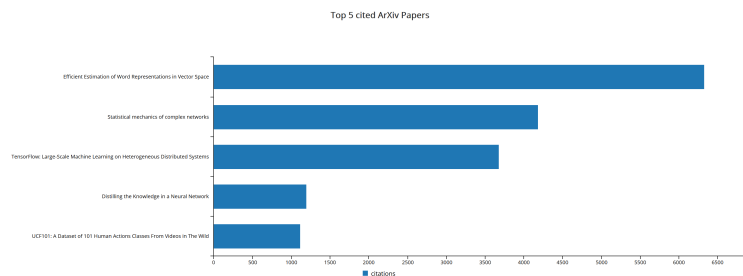
2.1

Task	Visualization
1	Heatmap
2	Categorical Bar Chart
3	Time Series Line Chart, Stacked Area Chart
4a	Force Directed Graph
4b	Tree Map

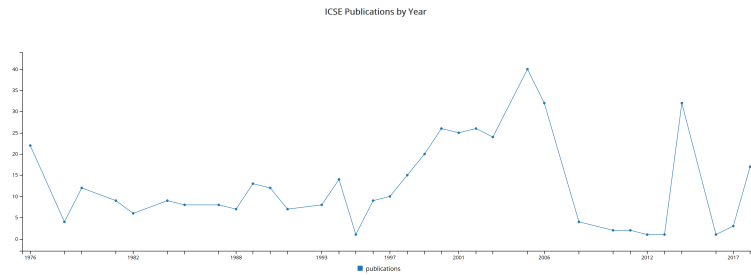
2.2



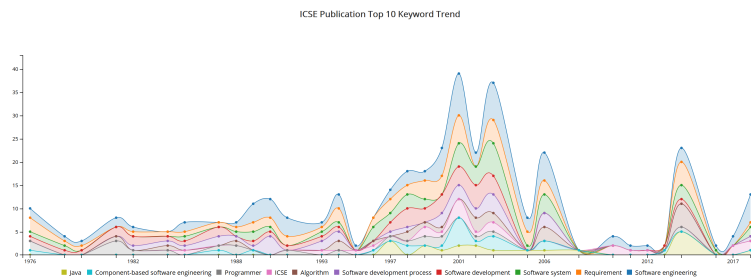
Task 1: Heat Map



Task 2: Bar Chart

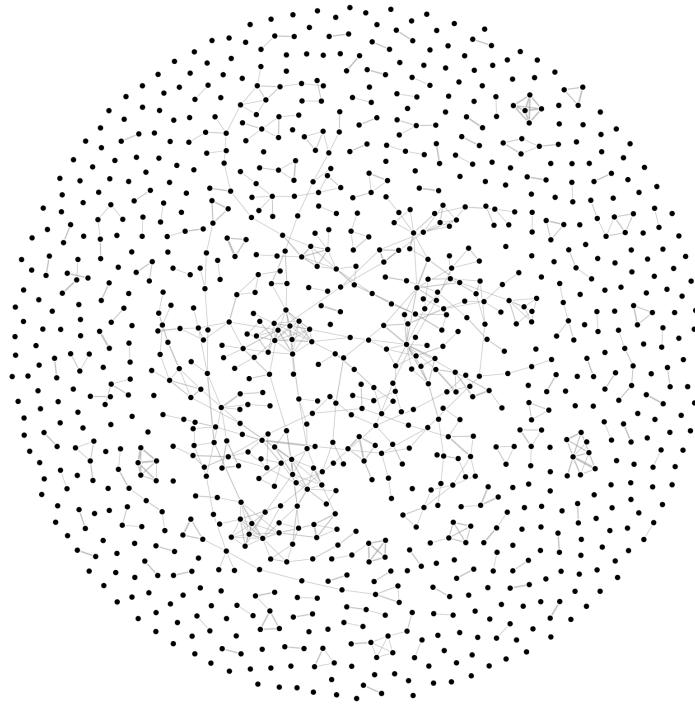


Task 3: Time Series Line Chart



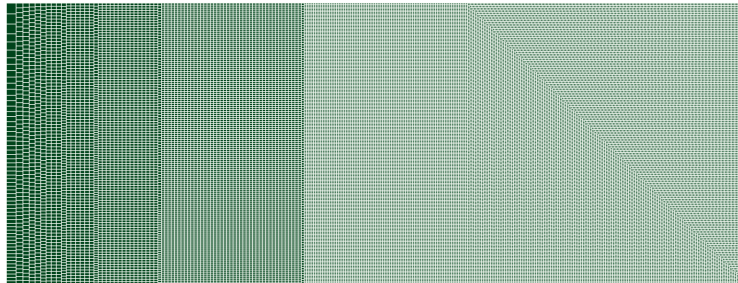
Task 3: Stacked Area Chart

ArXiv Top 1000 Author-Co-Author Network



Task 4a: Force Directed Graph

ArXiv Author Contribution Amount



Task 4b: Tree Map

2.3

For Task 3, we encoded the 10 most frequently occurring keywords per year in ICSE publications into a stacked area chart. We first counted and extracted the 10 most

frequently occurring keywords, and collected these by year. Using the X-Axis for year, and the Y-Axis for the number of occurrences of the keywords, we mapped out the points, and then connected them using a spline with colored area.

For Task 4a, we represented authors as nodes in a graph, and drew the relations between authors and co-authors by connecting them with lines if they had written a paper together. In addition, we defined the attractive force between authors as high if they were co-authors, and low if one had referenced another. This gave us a force-directed graph representing the relation of authors.

3 Other Information