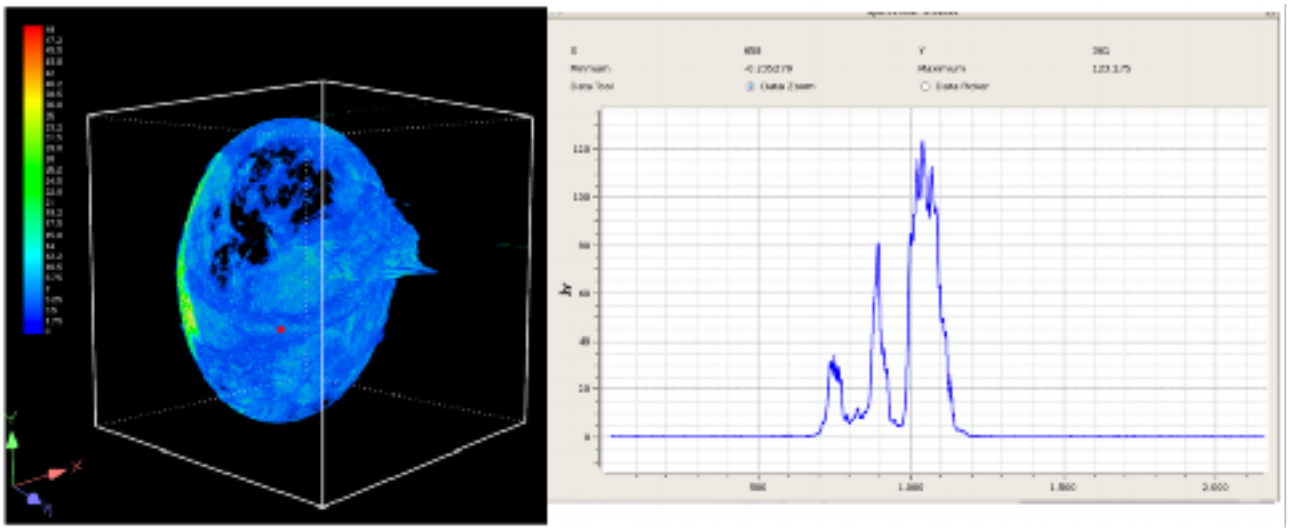
Assignment 2 - Visualization in Media and Literature

Academic Literature

Paper: Tera-scale Astronomical Data Analysis and Visualization
Source: goo.gl/pn117b
This paper is about efficiently analyzing and visualizing tera bytes of astronomical data by proposing a framework based on GPUs.

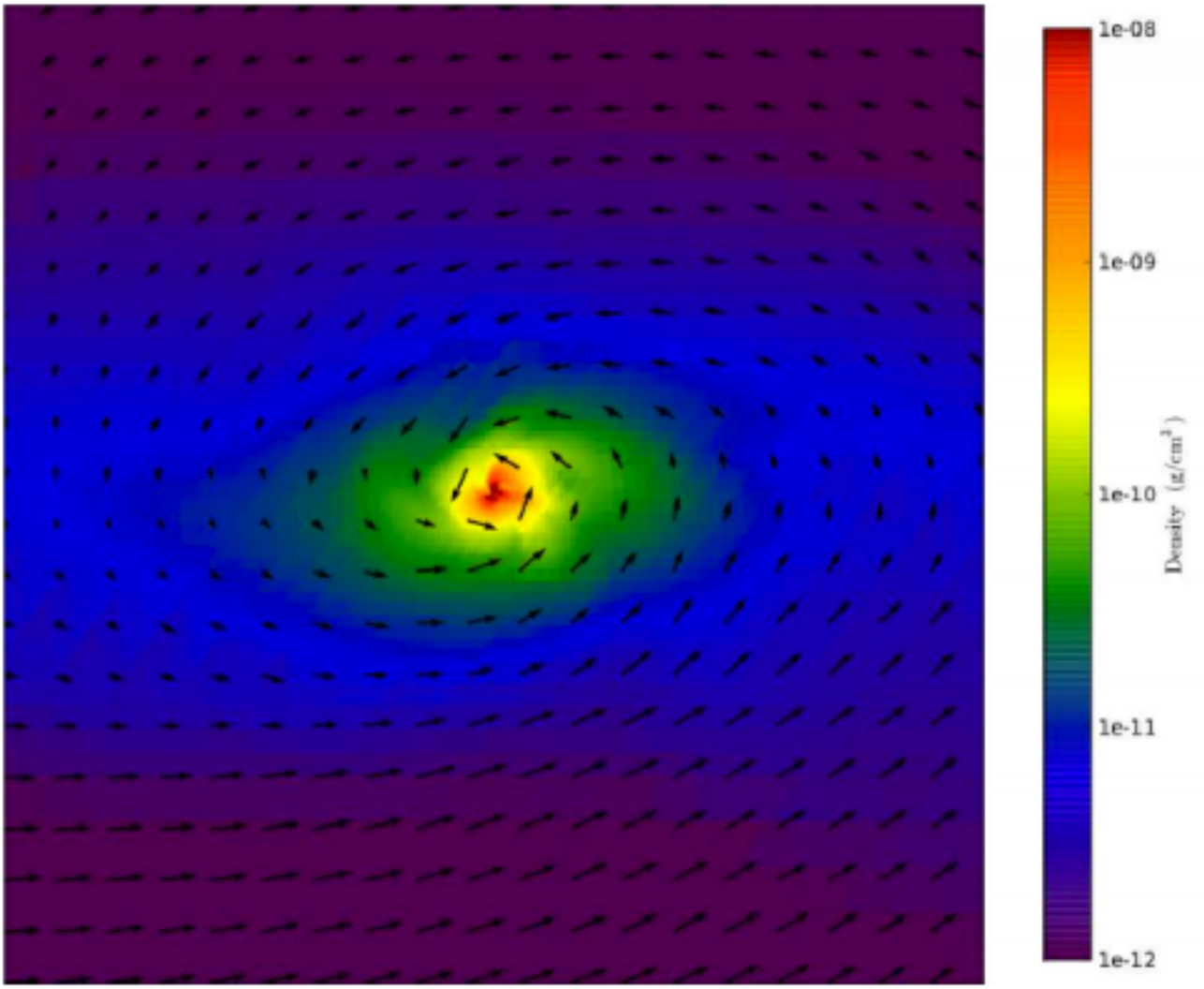


Here the visualization shows a 3D spectrum tool designed by the authors. The functionality presents an integration between the visualization output and the ability to query the data stored in multiple processing clients based on the user selection.
On the left, the figure shows a volume rendering output for the Galactic All-Sky Survey data cube with a red dot indicating the place that was picked by the user. On the right, the spectrum is generated for a line-of-sight ray starting from this position and going through the data cube. The tool features a zooming function and a point picker to show the exact data value at a specific location.
There is a color bar depicting the density of the GASS data cube.

Paper: YT: A MULTI-CODE ANALYSIS TOOLKIT FOR ASTROPHYSICAL SIMULATION DATA

Source: goo.gl/yQmKSC

This paper is about a tool called YT, an open source, community developed astrophysical analysis and visualization toolkit.



It is an example of oblique slice through a primordial star forming region, where the image plane has been chosen such that its normal is coincident with the angular momentum vector.

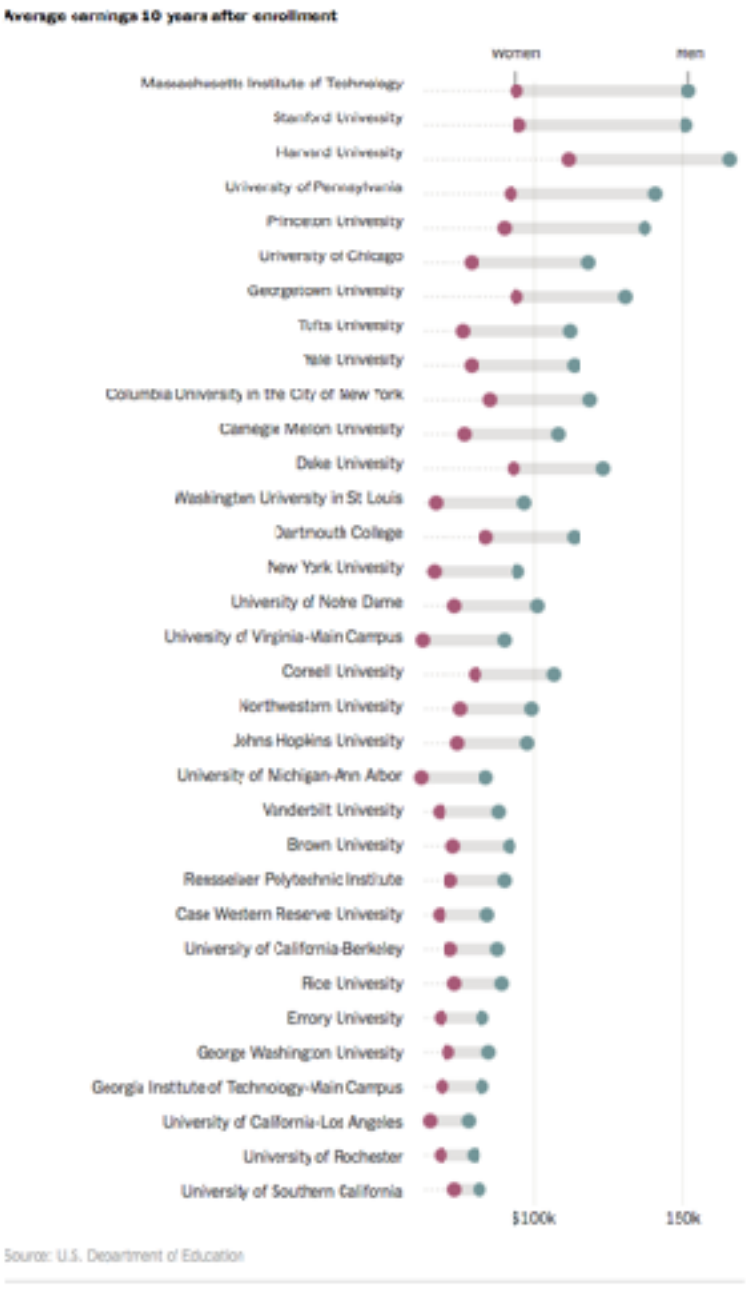
It introduces the concept of cutting plane, an arbitrarily aligned plane that transforms the intersected points into a new coordinate system such that they can be pixelized and made into a publication-quality plot.

Here the difference in the colors on the main graph probably shows the difference in the velocities in increasing order towards the center. The color bar shows the density of the color or the velocity.

The direction of velocity vector is shown by the arrows. One change/improvement could be a better representation of the direction of the velocity vector.

Media

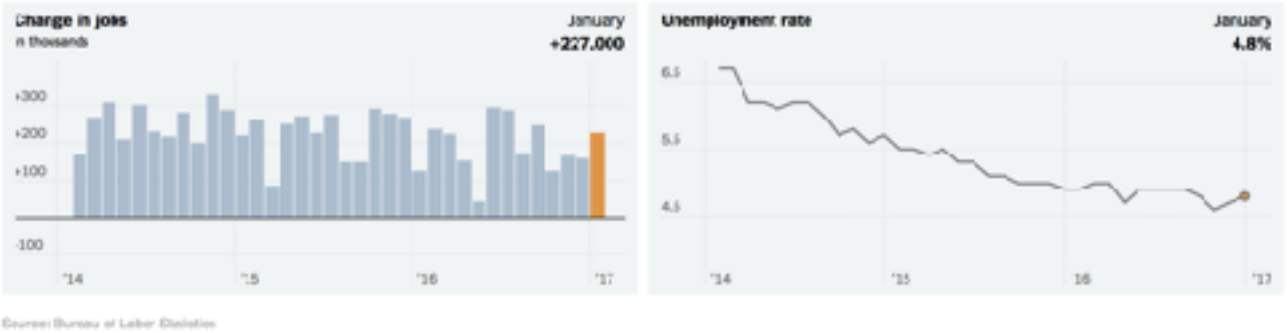
News Article: Gaps in Earnings Stand Out in Release of College Data
Source: goo.gl/kGAJDC
This article is about the gender gap earnings 10 years after graduating from the elite colleges of US.



This graph here shows the difference in the male and female earnings 10 years after they graduate from different elite schools of US. Women are depicted by purple dots whereas men are depicted by blue dots.

On the y-axis, there are names of different universities in order of increasing earnings after graduation and on x axis there is a dotted grid of 100k and 150k salaries.
These are kind of several dot plots plotted on a single graph.
We can make line plots as well to also show the highs and lows of the salaries.

News Article: U.S. Starts Year With Job Surge, but Pay Gains Are Weak
Source: goo.gl/z5H0S8
This article is about change in the number of jobs and the unemployment rate across US after the latest presidential elections.

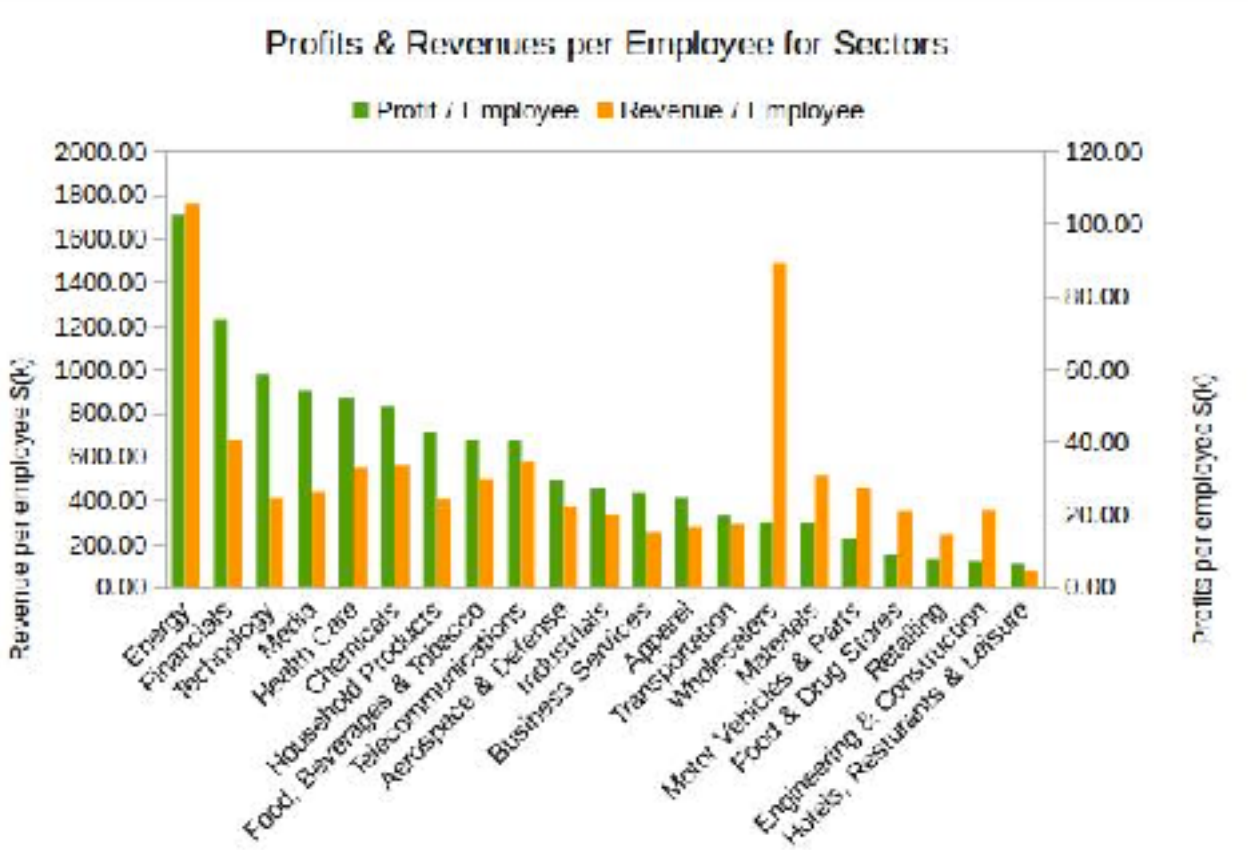


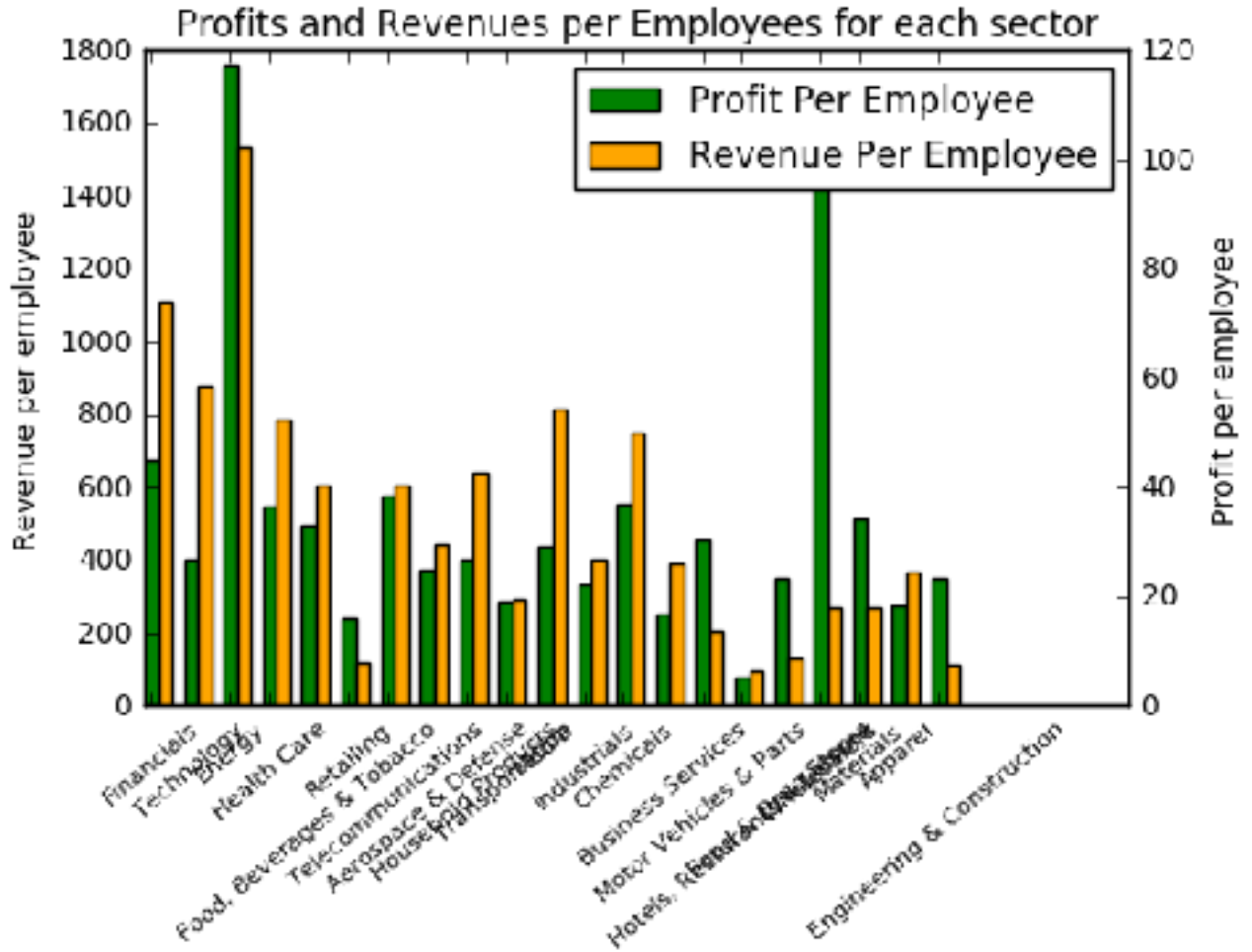
The left is a bar graph where on the x axis is the spread of different years from 2014 to 2017. On the Y axis are the number of jobs in thousands. The number of jobs are plotted for each month showing a trend of change in the number of jobs.
On the right is a line plot showing the unemployment rate in percentage from 2014 to 2017. The right plot shows a decrease in the unemployment but if we just see the last portion the rate increased by a bit.

News Article: 6 interesting graphs you would not have seen about the Fortune 500 companies
Source: goo.gl/OxffP1
This article on LInkedIN shows visually, many different interesting facts about the Fortune 500 companies.
This has double bar plots one for revenue per employee and other for profits per employee. It has 2 y axis and on the x axis are the sector names.

Here we can see a comparison of sector wise profits per employee and revenue per employee. Green and orange color has been chosen to distinguish.

This here is my recreation of the visualization. It's not perfect but I've tried to do my best.


Profits & Revenues per Employee for Sectors
Profit / Employee
Revenue / Employee
2000.00
1800.00
1600.00
1400.00
1200.00
1000.00
800.00
600.00
400.00
200.00
0.00
120.00
100.00
80.00
60.00
40.00
20.00
0.00
Energy
Financials
Technology
Media
Health Care
Chemicals
Household Products
Food, Beverages & Tobacco
Telecommunications
Aerospace & Defense
Industrials
Business Services
Apparel
Transportation
Wholesalers
Materials
Motor Vehicles & Parts
Food & Drug Stores
Retailing
Engineering & Construction
Hotels, Restaurants & Leisure


Profits and Revenues per Employees for each sector
Profit Per Employee
Revenue Per Employee
Revenue per employee
Profit per employee
1800
1600
1400
1200
1000
800
600
400
200
0
120
100
80
60
40
20
0
Financials
Technology
Energy
Health Care
Retailing
Food, Beverages & Tobacco
Telecommunications
Aerospace & Defense
Industrials
Chemicals
Business Services
Motor Vehicles & Parts
Apparel
Engineering & Construction