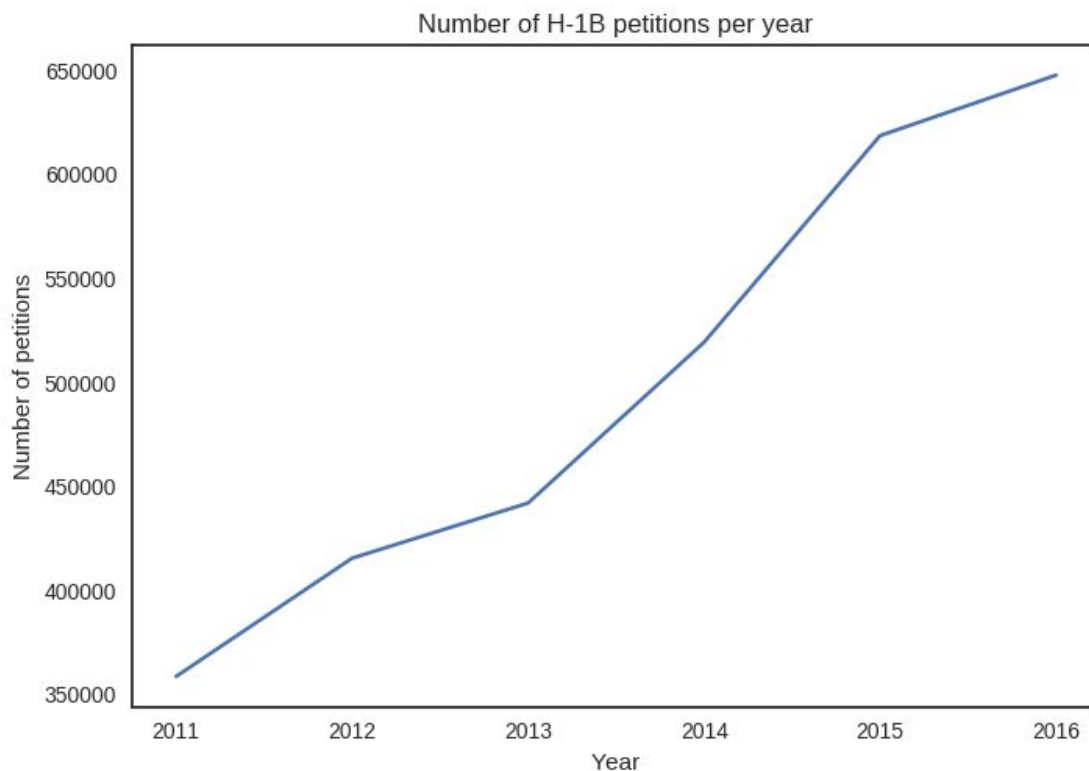


Project Write Up

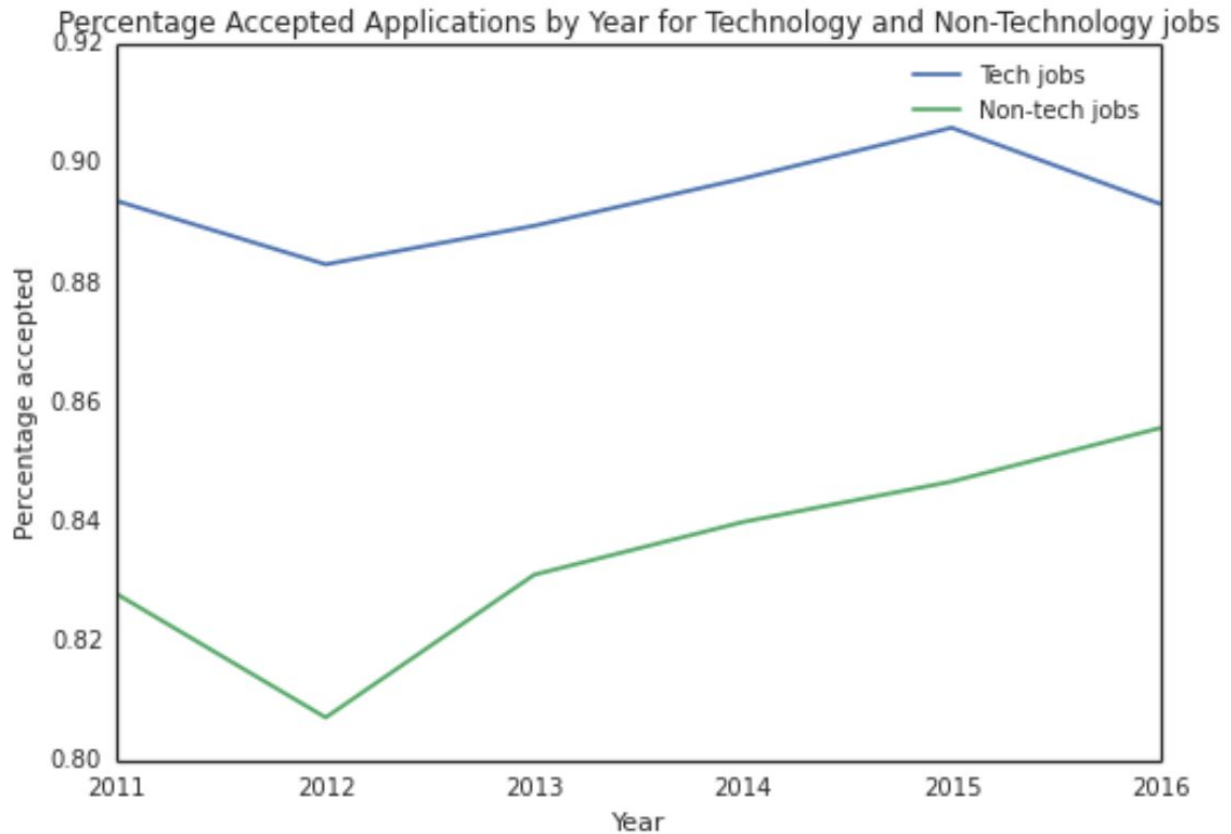
There are over 3 million H-1B records within the data set. This provided performance problems when attempting to manipulate such a large amount of information. Due to these performances issues subsets of the data were used in some circumstances of this research. If a subset of the data was used instead of the entire dataset it shall be noted below.

The number of petitions per year were calculated by simply counting the records for each given year in the range 2011-2016. The number of petitions for H-1B visas has risen each year since 2011 with 350,000 petitions filed in 2011 and 650,000 filed in 2016. Below is a graph of the number of petitions filed each year.

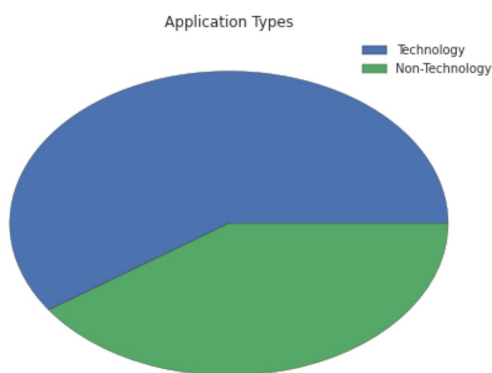


All filed H-1B applications are assigned a status whose valid values include “Certified,” “Certified-Withdrawn,” “Denied,” and “Withdrawn”. Applications marked “Certified” are eligible for the next step of the application process while the other options are ineligible for the H-1B visa. All filed H-1B applications also contain a column labeled SOC_NAME. These are federally regulated job position titles. In order to identify SOC names that qualify as tech jobs the top 100

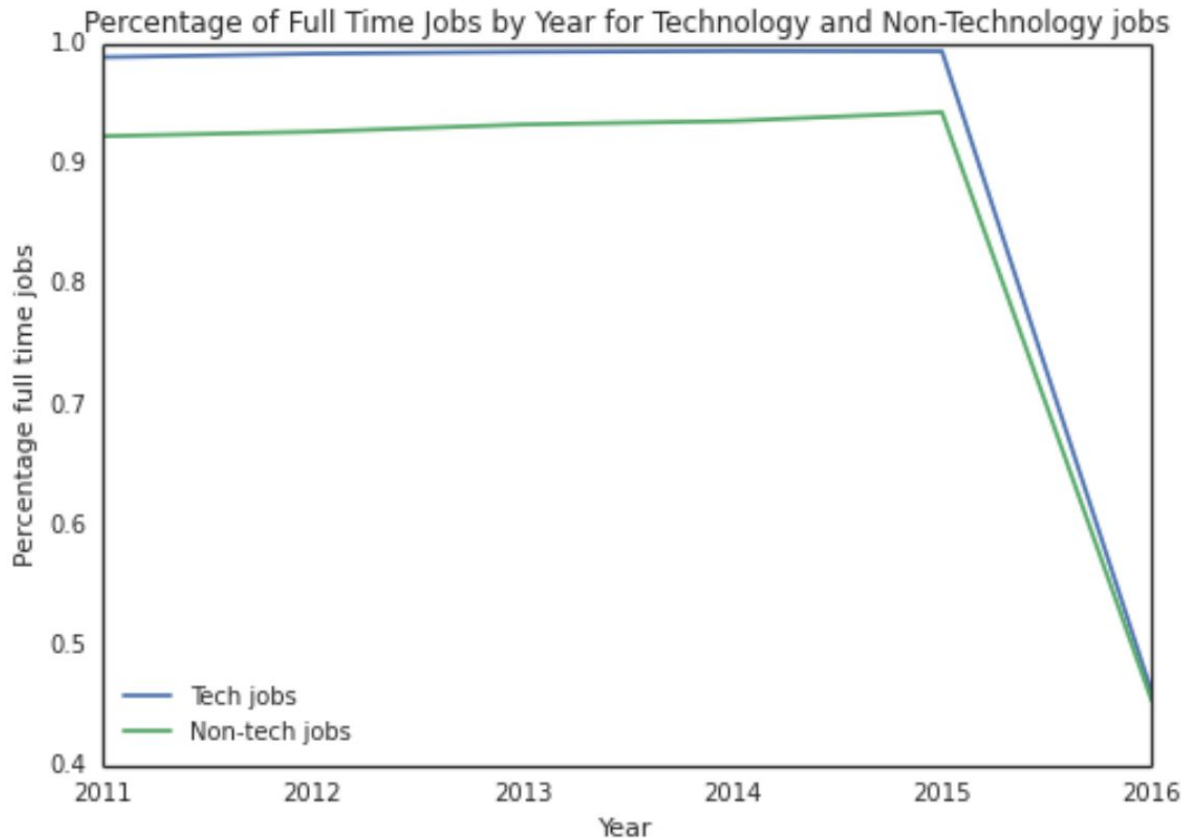
SOC names were examined. The top 100 SOC names are the ones with the most total positions. Of the 100 job titles 30 qualified in my mind as tech jobs. The remaining 70 SOC names are considered non tech jobs. The list of 30 tech job titles can be found in the attached Python notebook. This separation of tech and non tech jobs is used below to track the certification rates of these positions. Overall tech jobs have a higher certification rate than non tech jobs for every year of the records. A plot of these percentages is below.



Also it is important to note that over the 6 year period tech related petitions total to about $\frac{1}{3}$ of all petitions filed.

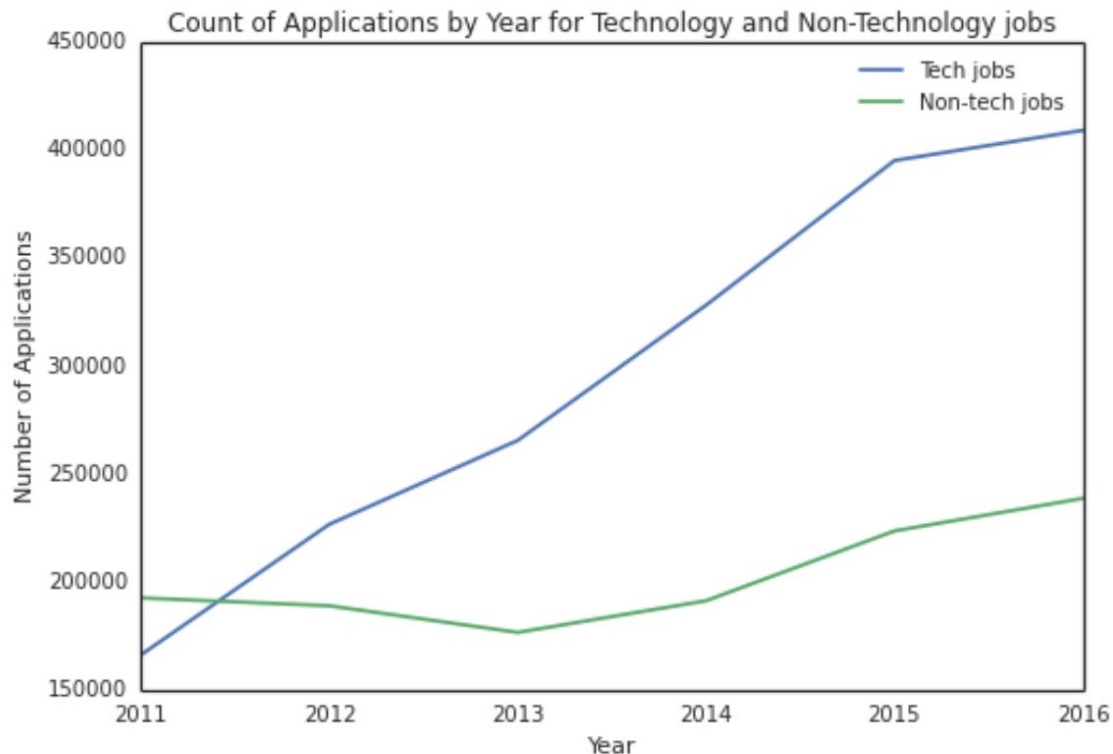


The percentage of full time jobs was tracked as well. Similarly to the certification rate the ratio of full time position is higher for tech jobs than for non tech jobs. A plot of the percentage of full time position for each year is below.



The number of applications filed each year for tech positions and non tech positions were tracked. The number of tech position applications that have been filed has increased each year since 2011. However the number of non tech applications has not really increased much since 2011 and has even decreased during certain years. A plot of the petition counts for tech and

non tech positions each year is below.



CONCLUSION

The increasing number of H-1B petitions each year does not come as a surprise as this steady increase has been the trend for the past 50 years. It is interesting that while the total number of filed petitions is continuously increasing, the number of petitions filed for non tech related positions has stagnated. Note in the above chart of number of applications per year how quickly the number of tech related positions has grown. Over the 6 year period there has been an increase of 300,000 tech petitions per year for a total growth of 248% over that time. This clearly shows that the H-1B program has become heavily focused on technology, at least from the perspective of the people applying for the visa.

The next step is to analyze the certifications rates of the filed visas. The certification rates for tech related positions are always about 5-7.5% higher than their non tech counterparts for each of the 6 years of data. Any change in the rates over time is usually mimicked between the two types of positions. This shows that applications for tech related jobs are more likely to be approved than non tech positions.

The next result to consider is the percentages of full time positions. Over the 6 year period nearly all tech related positions were for full time positions while about 90% of non tech positions were full time. For every year tracked there is a higher percentage of full time tech jobs than there are full time non tech jobs. There is an anomaly in the data in that in 2016 there was

a sharp drop in the percentage of full time positions for both tech and non tech. During this year only 45% of petitions filed were for full time positions.

By comparing all of this information at once it is clear that the H-1B program has become preferential towards technology jobs. The number of applications for tech positions has risen dramatically over the past 6 years while the number of non tech applications has not risen at all. The data shows that visa program has adapted to these changes by the fact that tech applications are more likely to be approved when compared to non tech applications. The fact that the tech position applications are more likely to be full time jobs further supports this. While tech related applications do not make up the majority of all applications filed, the fact that they are more likely to be certified for full time positions demonstrates that there is a positive bias towards technology workers in the H-1B visa program.