Project 2: Analyze Survey Data

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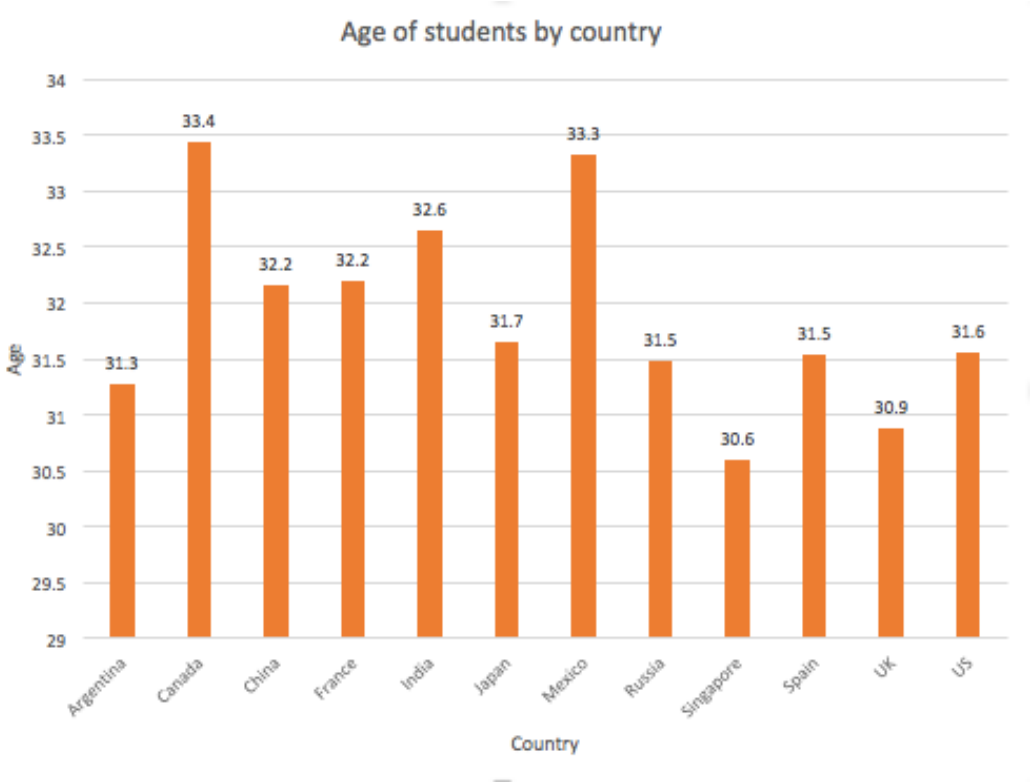
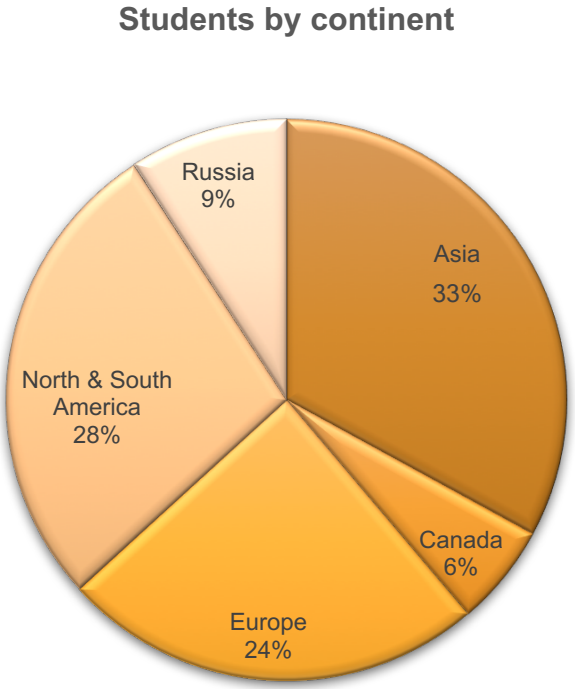
What is the average age of Udacity Survey respondents?



The age of Udacity Survey Respondents (that is not from the entire Udacity Student population) vary from 30.6 to 33.4 years. Youngest survey respondents (30.6) came from Singapore while oldest (33.4) came from Canada.

The age doesn't vary significantly and indicates that people who got their degrees and work experience, would like to update their knowledge in technical roles. Technology is changing very fast and, as per statistic, technical courses are the most famous among Udacity students which will be discussed below.

From where Udacity survey respondents came from?

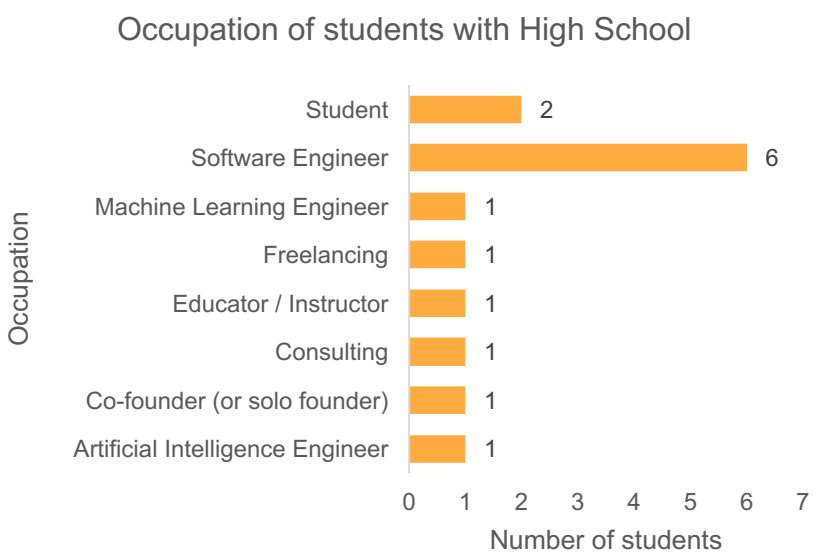


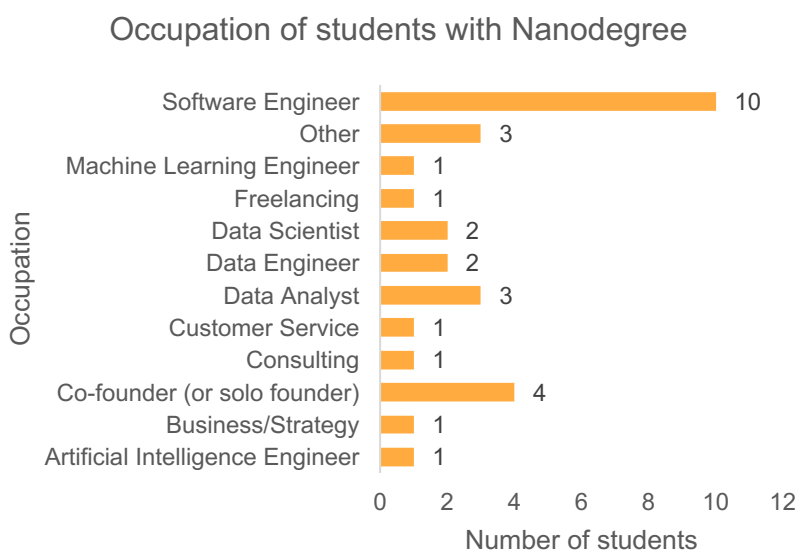
The majority of Udacity survey respondents (33%) came from Asia, followed by North & South America (28%), Europe (24%), Russia (9%), and Canada (6%).

Russia has 9% of survey respondents only which can be explained by language barrier.

Canada has 6% of survey respondents where French is the mother tongue of about 7.2 million Canadians (20.6% of the Canadian population) and might cause language barrier also. Apart from that, majority of authoritative Canadian Universities offer plenty of free online courses which is competitive.

What is the most common occupation among survey respondents?





Software Engineer is heading way above other occupations for both survey respondents with High School and with Nanodegree level of education. However, it is clear that respondents with Nanodegree are technology oriented. Occupation related to data analysis, like Data Scientist, Data Engineer and Data Analyst which give summary of 7 students in total showing that work with data is a second most popular profession after Software Engineering among respondents .

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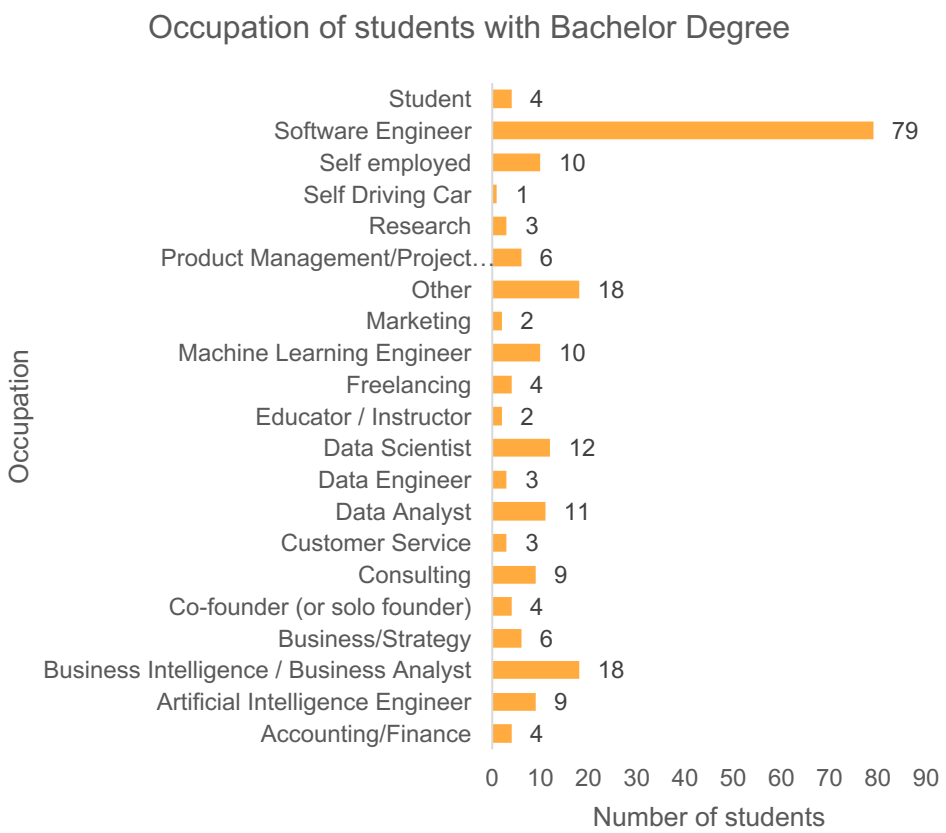
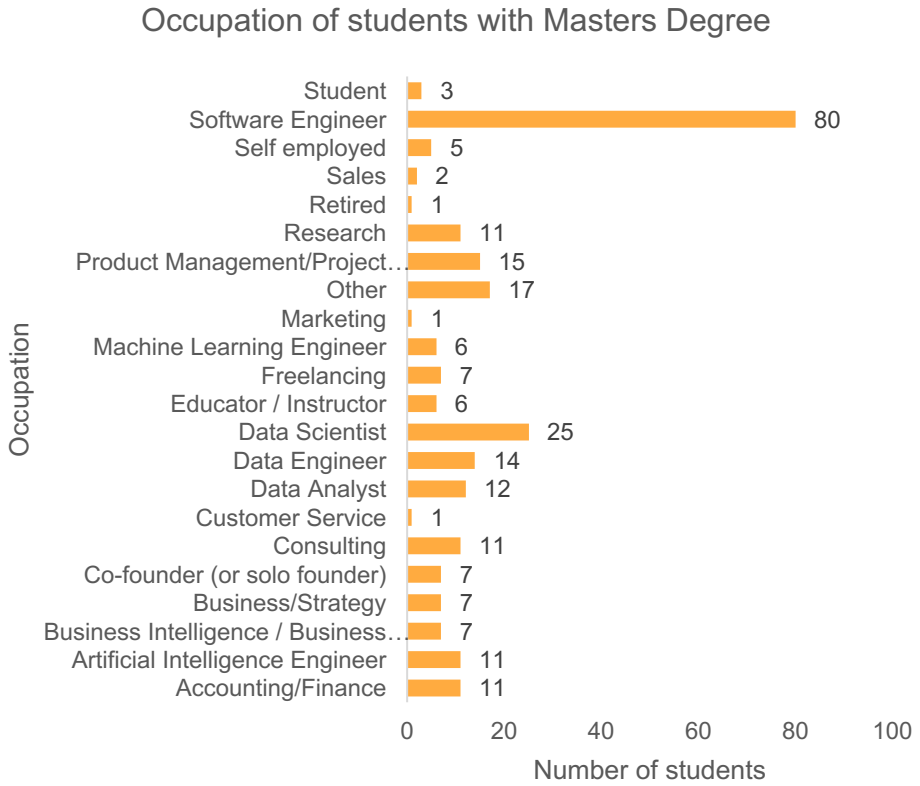


Software Engineer (79) is leading among survey respondents with Bachelor Degree too, followed by Business Intelligence/ Business Analyst (18).

Summary of Data Scientist, Data Engineer and Data Analyst where responsibilities sometimes are similar on certain parts is 26 which shows that data analysis is second leading direction in technology after Software Engineering where survey respondents are working at present moment.

What is the most common occupation among survey respondents?



Majority of Udacity survey respondents with Masters Degree are Software Engineers (80) followed by Data Scientist (25).

Product and Project Management is popular profession among survey respondents and based on this it would be great if Udacity can consider to offer advanced online courses for people who already employed and would like to get updated skills on Project Management. Basic PM course can arise interest among people who is looking for smooth and qualitative career transition.

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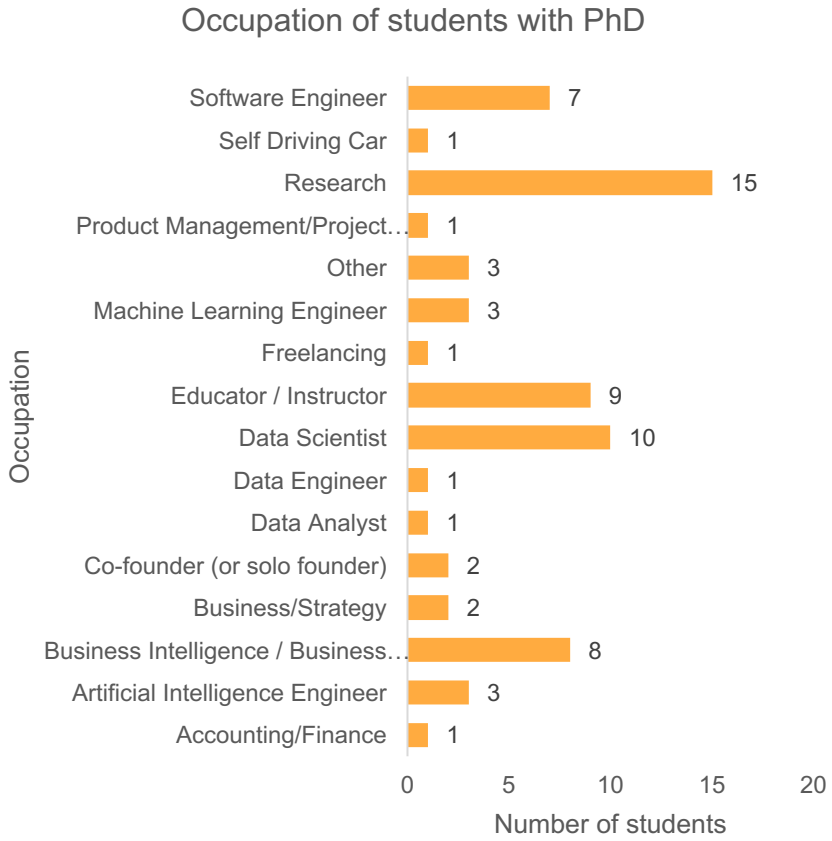

Situation with PhD differs significantly with all previous student's degrees discussed above due to the importance of having a degree apart from advanced knowledge.

Majority of students with PhD are working in Research (15) and as Data Scientists were deep analysis is essential, followed by Educator (9) where teaching skills are important. There are many science institutions and universities which give preference for candidates with PhD.

Number of survey respondents in Software Engineering (7) is significantly lower because practical experience is more valued in this field rather than a Degree.

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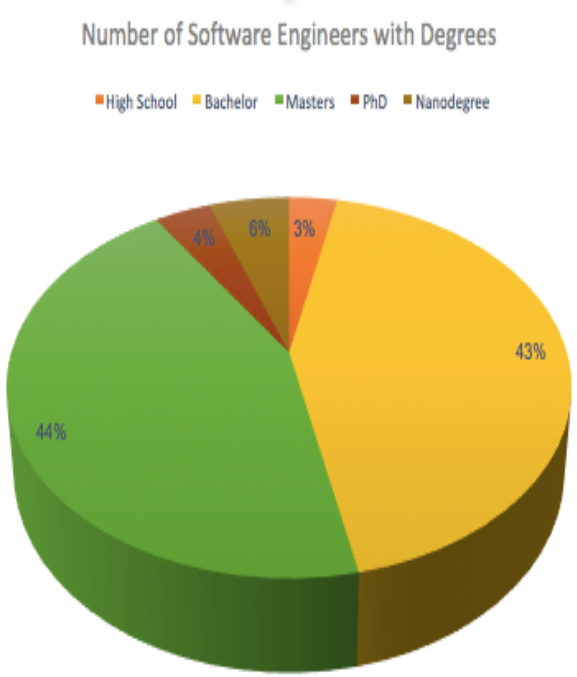
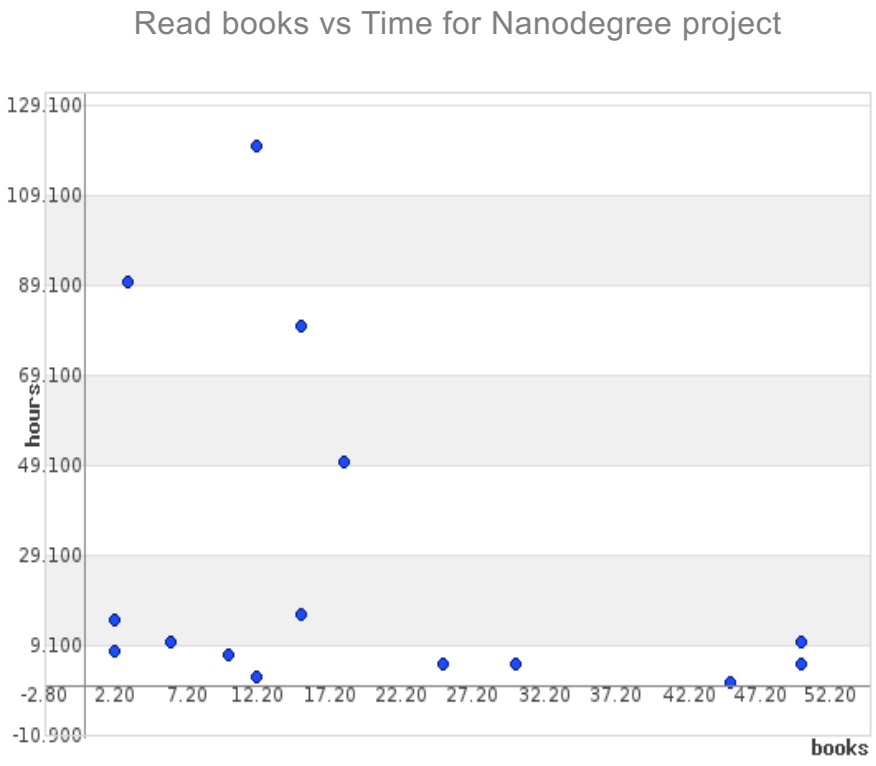


The most common occupation among Udacity survey respondents with High School, Nanodegree, Bachelor and Masters degrees is Software Engineer.

Respondents with Masters Degree (44%) mainly employed by Fortune 500 companies while people with Bachelor (43%) mainly employed in start ups or less famous companies.

6% of survey respondents have Nanodegree, 4% have PhD and 3% have High School diploma.

Is there any connection between quantity of books read per year and time spend on Nanodegree project?



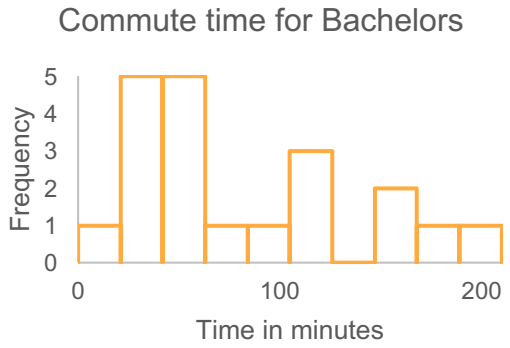
The average number of first observation (books) is 14 and average number of second observation (time spend of Nanodegree project) is 10 hours. The difference of mean between two observations is approximately 6 which indicates that the connection between them is not significant.

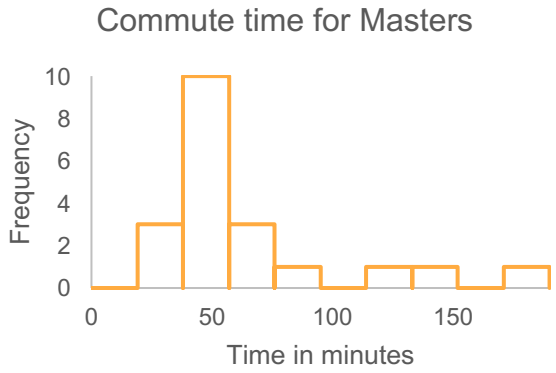
However, standard deviation for first observation is 15.5 and for second is 33.6, which could be a result of outliers in the distribution.

Also, result of high numbers in hours (80, 90, 100) could give better result if to remove extremely high numbers and instead of 12 random observations put into account observations with smoother difference.

As per current scatter plot, there is no significant connection between quantity of books read per year and time spent on the project which indicates that reading books doesn't affect time what survey respondents spend of the project.

Does commute distance differ for respondents with Bachelor and Masters Degrees?





The histogram represents Bachelors vs Masters.

Both distributions are right-skewed which indicates that the mode is less than the mean, and the mean is higher than the median.

The mean differs by 19 minutes between both distributions. Therefore, commute time for survey respondents with Bachelor degrees tend be 19 minutes longer than for survey respondents with Masters degree.

The range for Bachelors is 180 minutes and for Masters is 150 which indicates that commute time for people with Masters is 30 minutes less.

The Standard Deviation for Bachelors is approximately 55 minutes, while for Masters is approximately 41 minute, which indicates that the variability in commute times for Bachelors is larger.

Resources

https://en.wikipedia.org/wiki/French_language_in_Canada

http://stattrek.com/hypothesis-test/difference-in-means.aspx?Tutorial=AP

http://www.statisticshowto.com/mean-difference/

https://www.youtube.com/watch?v=DMXTkwE3zGo

http://www.statisticshowto.com/probability-and-statistics/skewed-distribution/

https://mathcracker.com/line-graph-maker.php#results

Thank you!