

# **Data Analysis of Nobel Prize Winners**

Submitted in partial fulfillment of the requirements of the degree  
**BACHELOR OF ENGINEERING IN COMPUTER ENGINEERING**

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# 1. The most Nobel of Prizes

The Nobel Foundation has made a dataset available of all prize winners from the start of the prize, in 1901, to 2016.



	year	category	prize	motivation	prize_share	laureate_id	laureate_type	full_name	birth_date	bi
0	1901	Chemistry	The Nobel Prize in Chemistry 1901	"in recognition of the extraordinary services ...	1/1	160	Individual	Jacobus Henricus van 't Hoff	1852-08-30	Rc
1	1901	Literature	The Nobel Prize in Literature 1901	"in special recognition of his poetic composi...	1/1	569	Individual	Sully Prudhomme	1839-03-16	
2	1901	Medicine	The Nobel Prize in Physiology or Medicine 1901	"for his work on serum therapy, especially its...	1/1	293	Individual	Emil Adolf von Behring	1854-03-15	f
3	1901	Peace	The Nobel Peace Prize 1901	NaN	1/2	462	Individual	Jean Henry Dunant	1828-05-08	
4	1901	Peace	The Nobel Peace Prize 1901	NaN	1/2	463	Individual	Frédéric Passy	1822-05-20	
5	1901	Physics	The Nobel Prize in Physics 1901	"in recognition of the extraordinary services ...	1/1	1	Individual	Wilhelm Conrad Röntgen	1845-03-27	(Re

## 2. So, who gets the Nobel Prize?

We see that all of the winners in 1901 were guys that came from Europe. But that was back in 1901, looking at all winners in the dataset, from 1901 to 2016, which sex and which country is the most commonly represented?

(For *country*, we will use the `birth_country` of the winner, as the `organization_country` is NaN for all shared Nobel Prizes.)

```
911
Male      836
Female    49
Name: sex, dtype: int64
```

```
United States of America    259
United Kingdom              85
Germany                    61
France                     51
Sweden                     29
Japan                      24
Canada                     18
Netherlands                 18
Russia                     17
Italy                       17
Name: birth_country, dtype: int64
```

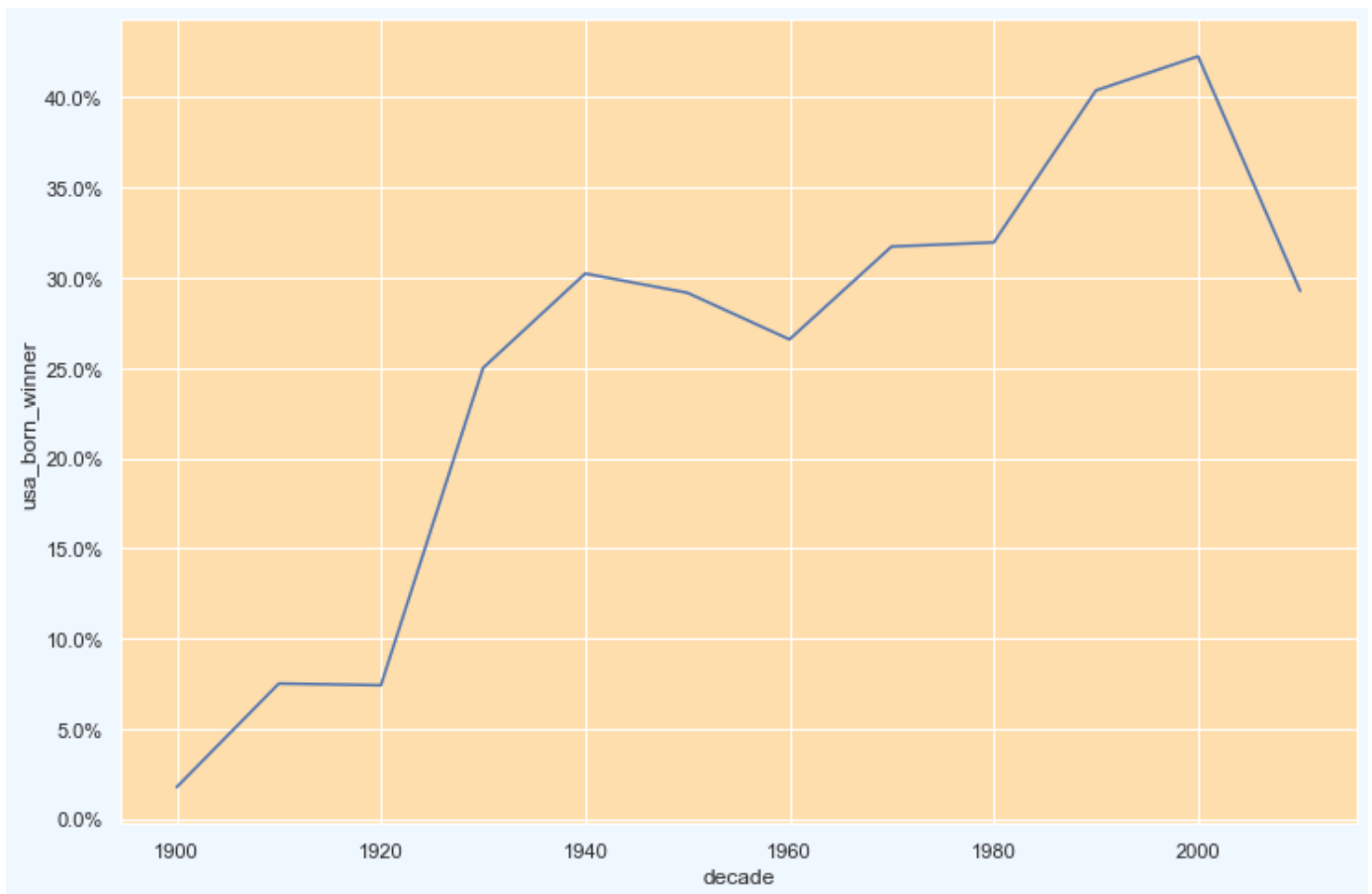
### 3. USA dominance

Earlier all Nobel Prize winners were European. So, when did the USA start to dominate the Nobel Prize charts?

	decade	usa_born_winner
<b>0</b>	1900	0.017544
<b>1</b>	1910	0.075000
<b>2</b>	1920	0.074074
<b>3</b>	1930	0.250000
<b>4</b>	1940	0.302326
<b>5</b>	1950	0.291667
<b>6</b>	1960	0.265823
<b>7</b>	1970	0.317308
<b>8</b>	1980	0.319588
<b>9</b>	1990	0.403846
<b>10</b>	2000	0.422764
<b>11</b>	2010	0.292683

### 4. USA dominance, visualized

When the USA started to dominate the Nobel charts we can see from this plot!



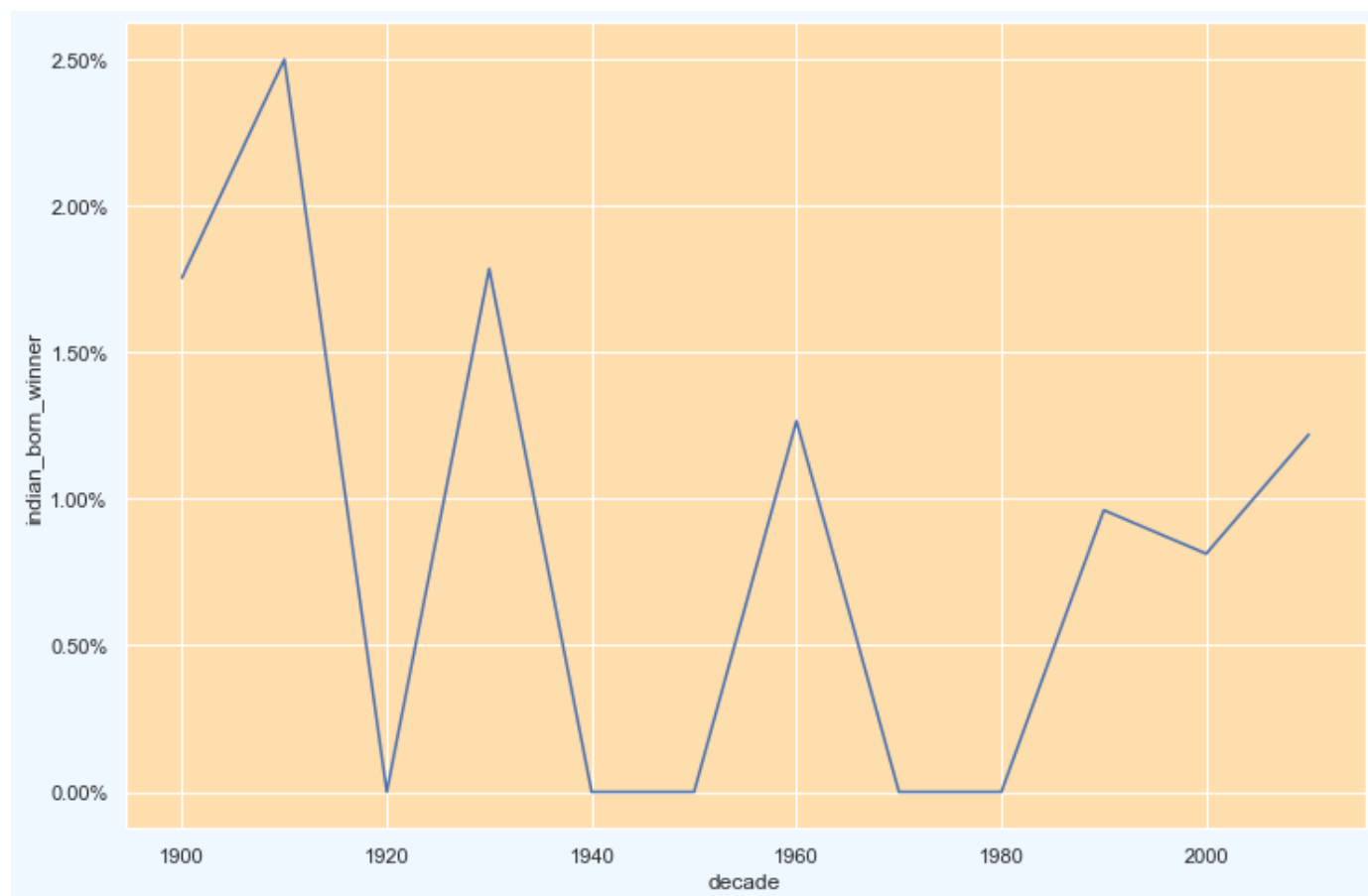
## 5. Performance of India

As we can see, performance of India is not as consistent as compared to that of USA.

	decade	indian_born_winner
0	1900	0.017544
1	1910	0.025000
2	1920	0.000000
3	1930	0.017857
4	1940	0.000000
5	1950	0.000000
6	1960	0.012658
7	1970	0.000000
8	1980	0.000000
9	1990	0.009615
10	2000	0.008130
11	2010	0.012195

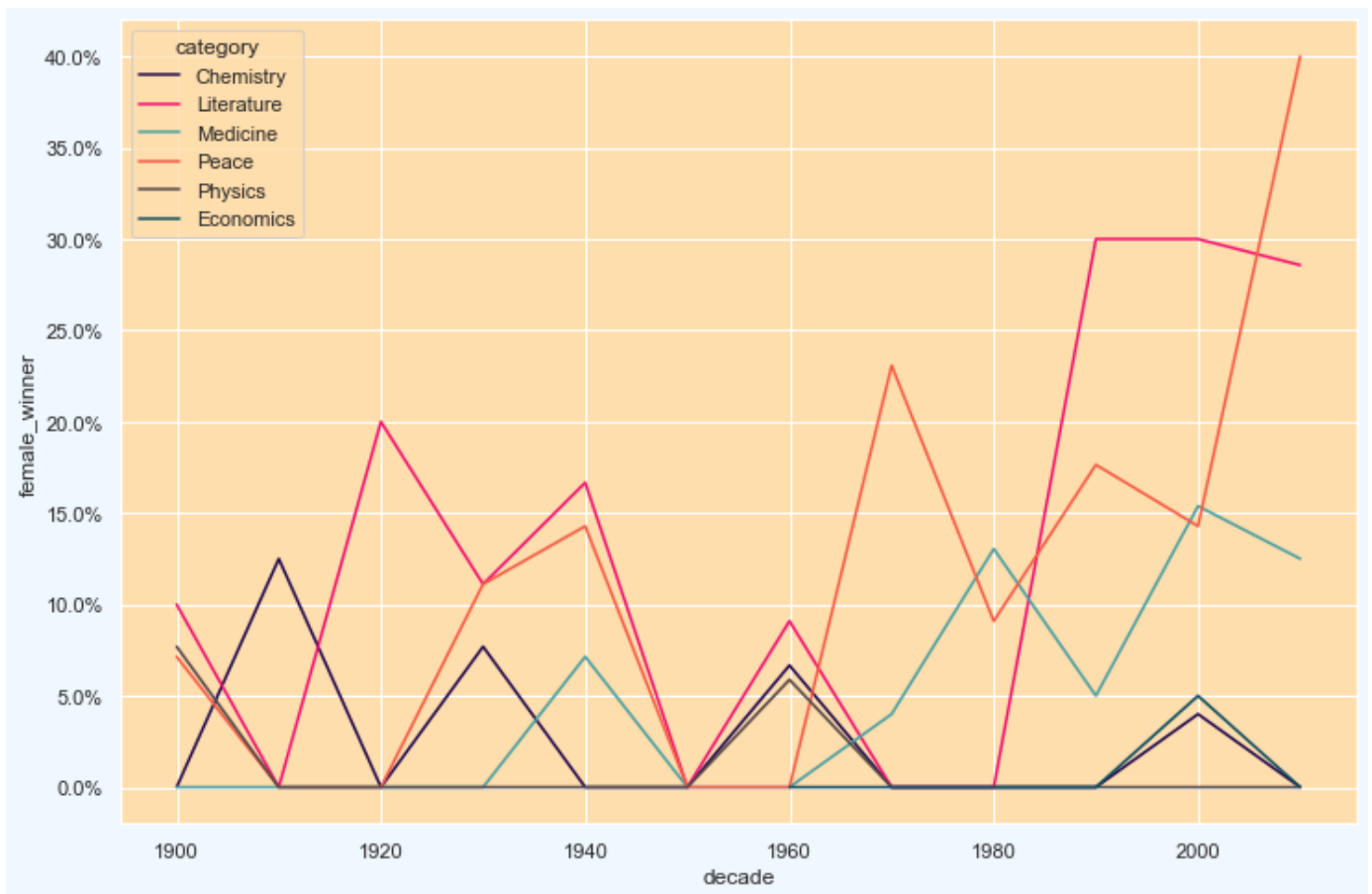
## 6. Performance of India, visualized

The chart has many ups and downs, we can determine that performance of India was inconsistent in the 20th Century. But recently there is an increase in the number of nobel prize winners in India.



## 7. Where do Female Laureates dominate?

We can see from the chart that Female Laureates have been dominating in Literature and Peace Awards. Medicine also has a positive trend.

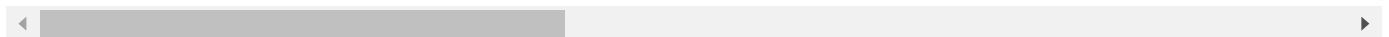


## 8. First woman to win a Nobel Prize?

Marie Curie got the Nobel Prize in Physics in 1903 for study in spontaneous radiation.

	year	category	prize	motivation	prize_share	laureate_id	laureate_type	full_name	birth_date	birth_c
19	1903	Physics	The Nobel Prize in Physics 1903	"in recognition of the extraordinary services ...	1/4	6	Individual	Marie Curie, née Skłodowska	1867-11-07	Wars

1 rows × 22 columns



## 9. Who received 2 or more prizes ?

For most scientists/writers/activists a Nobel Prize would be the crowning achievement of a long career. But for some people, one is just not enough, and few have gotten it more than once. Who are these lucky few?

	year	category	prize	motivation	prize_share	laureate_id	laureate_type	full_name	birth_dat
19	1903	Physics	The Nobel Prize in Physics 1903	"in recognition of the extraordinary services ...	1/4	6	Individual	Marie Curie, née Skłodowska	1867-11-0

	year	category	prize	motivation	prize_share	laureate_id	laureate_type	full_name	birth_dat
62	1911	Chemistry	The Nobel Prize in Chemistry 1911	"in recognition of her services to the advance...	1/1	6	Individual	Marie Curie, née Skłodowska	1867-11-0
89	1917	Peace	The Nobel Peace Prize 1917	NaN	1/1	482	Organization	Comité international de la Croix Rouge (Intern...	Na
215	1944	Peace	The Nobel Peace Prize 1944	NaN	1/1	482	Organization	Comité international de la Croix Rouge (Intern...	Na
278	1954	Chemistry	The Nobel Prize in Chemistry 1954	"for his research into the nature of the chemi...	1/1	217	Individual	Linus Carl Pauling	1901-02-2
283	1954	Peace	The Nobel Peace Prize 1954	NaN	1/1	515	Organization	Office of the United Nations High Commissioner...	Na
298	1956	Physics	The Nobel Prize in Physics 1956	"for their researches on semiconductors and th...	1/3	66	Individual	John Bardeen	1908-05-2
306	1958	Chemistry	The Nobel Prize in Chemistry 1958	"for his work on the structure of proteins, es...	1/1	222	Individual	Frederick Sanger	1918-08-1
340	1962	Peace	The Nobel Peace Prize 1962	NaN	1/1	217	Individual	Linus Carl Pauling	1901-02-2
348	1963	Peace	The Nobel Peace Prize 1963	NaN	1/2	482	Organization	Comité international de la Croix Rouge (Intern...	Na
424	1972	Physics	The Nobel Prize in Physics 1972	"for their jointly developed theory of superco...	1/3	66	Individual	John Bardeen	1908-05-2
505	1980	Chemistry	The Nobel Prize in Chemistry 1980	"for their contributions concerning the determ...	1/4	222	Individual	Frederick Sanger	1918-08-1

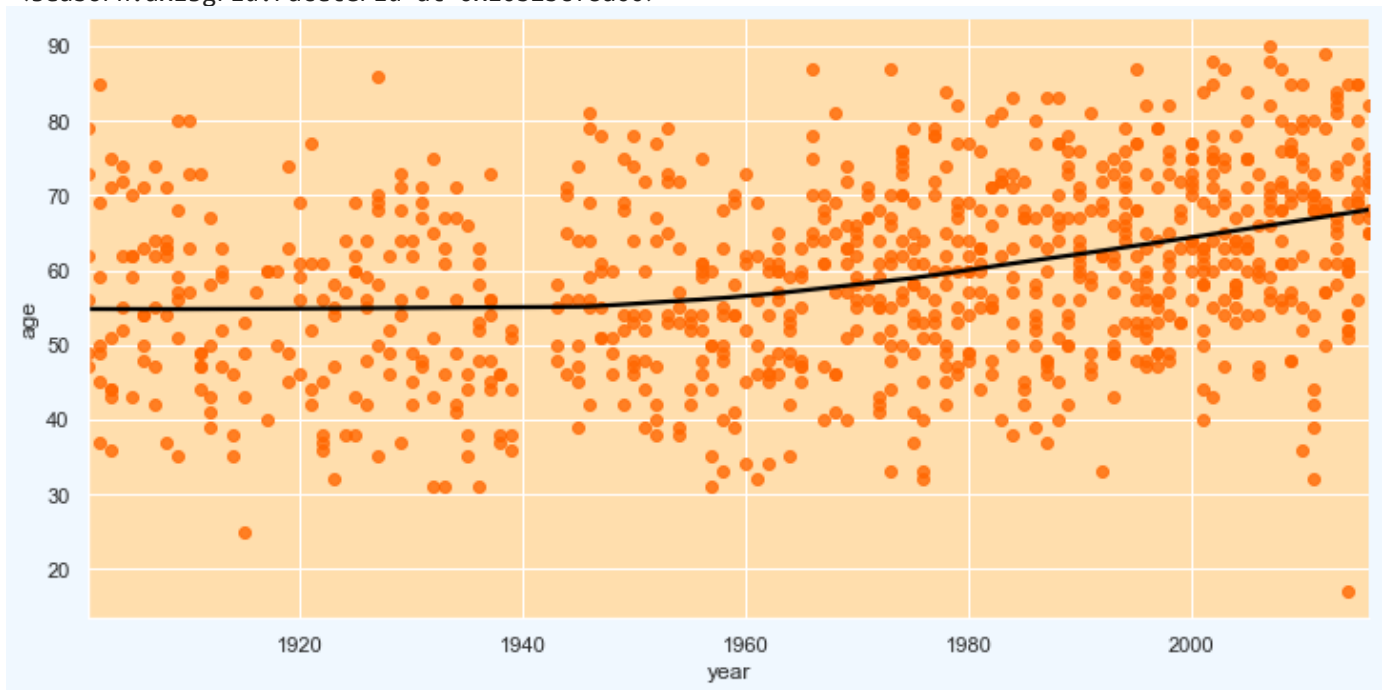
	year	category	prize	motivation	prize_share	laureate_id	laureate_type	full_name	birth_dat
523	1981	Peace	The Nobel Peace Prize 1981	NaN	1/1	515	Organization	Office of the United Nations High Commissioner...	Na

13 rows × 22 columns

## 10. How old are you when you get the prize?

Many laureates got more than 1 prize, but how old are you generally when you get the prize?

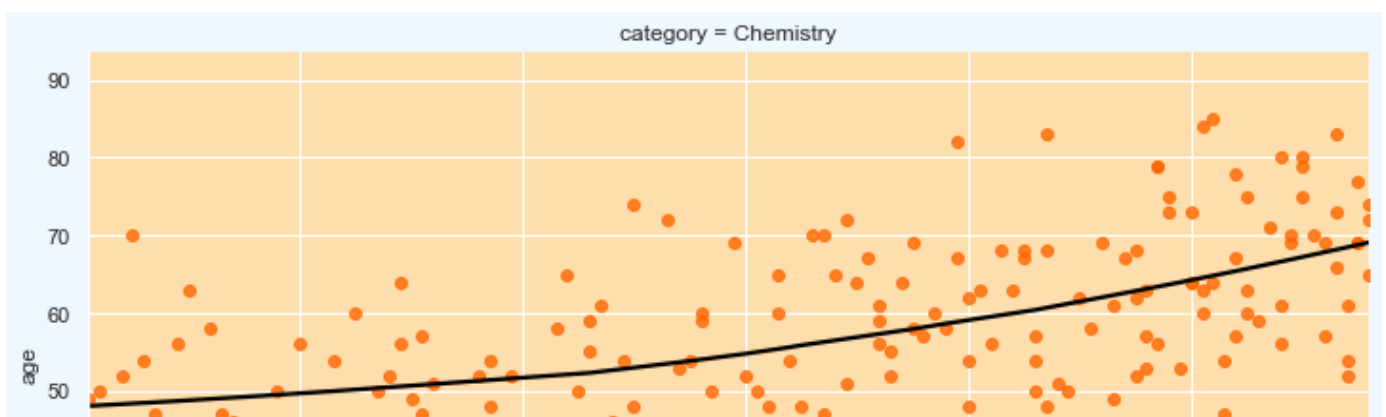
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```



## 11. Age differences between prize categories

We see that people use to be around 55 when they received the price, but nowadays the average is closer to 65. But there is a large spread in the laureates' ages, and while most are 50+, some are very young.

Let's look at age trends within different prize categories.









## 12. Oldest and youngest winners

The trend is strongest for physics: the average age used to be below 50, and now it's almost 70. Literature and economics are more stable. We also see that economics is a newer category. But peace shows an opposite trend where winners are getting younger!

Let's see who are the oldest and youngest winners.

year	category	prize	motivation	prize_share	laureate_id	laureate_type	full_name	birth_date	birth
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	year	category	prize	motivation	prize_share	laureate_id	laureate_type	full_name	birth_date	birth
793	2007	Economics	The Sveriges Riksbank Prize in Economic Scienc...	"for having laid the foundations of mechanism ...	1/3	820	Individual	Leonid Hurwicz	1917-08-21	Mo

1 rows × 23 columns

	year	category	prize	motivation	prize_share	laureate_id	laureate_type	full_name	birth_date	birth_city
885	2014	Peace	The Nobel Peace Prize 2014	"for their struggle against the suppression of...	1/2	914	Individual	Malala Yousafzai	1997-07-12	Mingora

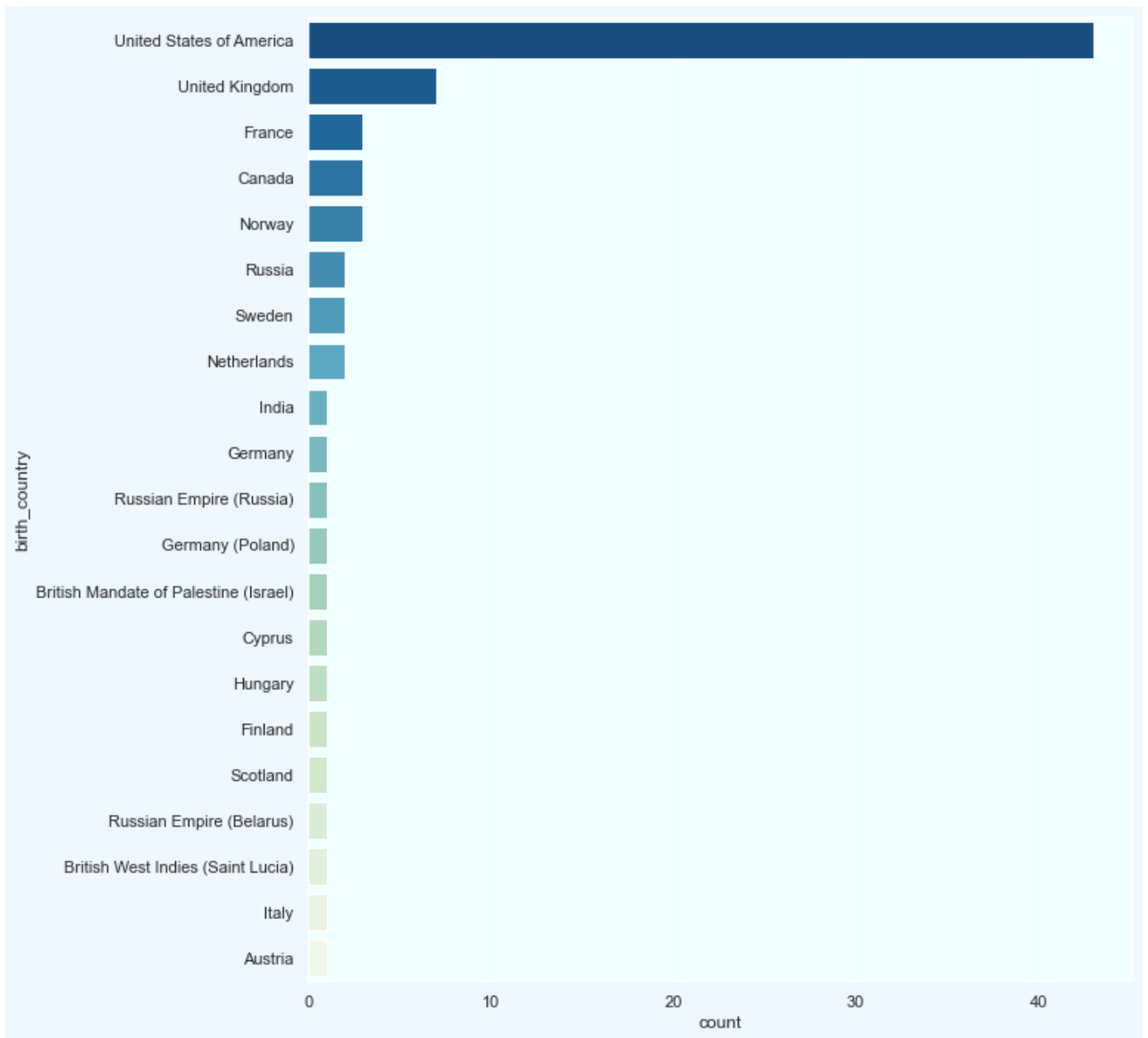
1 rows × 23 columns

	year	category	prize	motivation	prize_share	laureate_id	laureate_type	full_name	birth_date	birth_city
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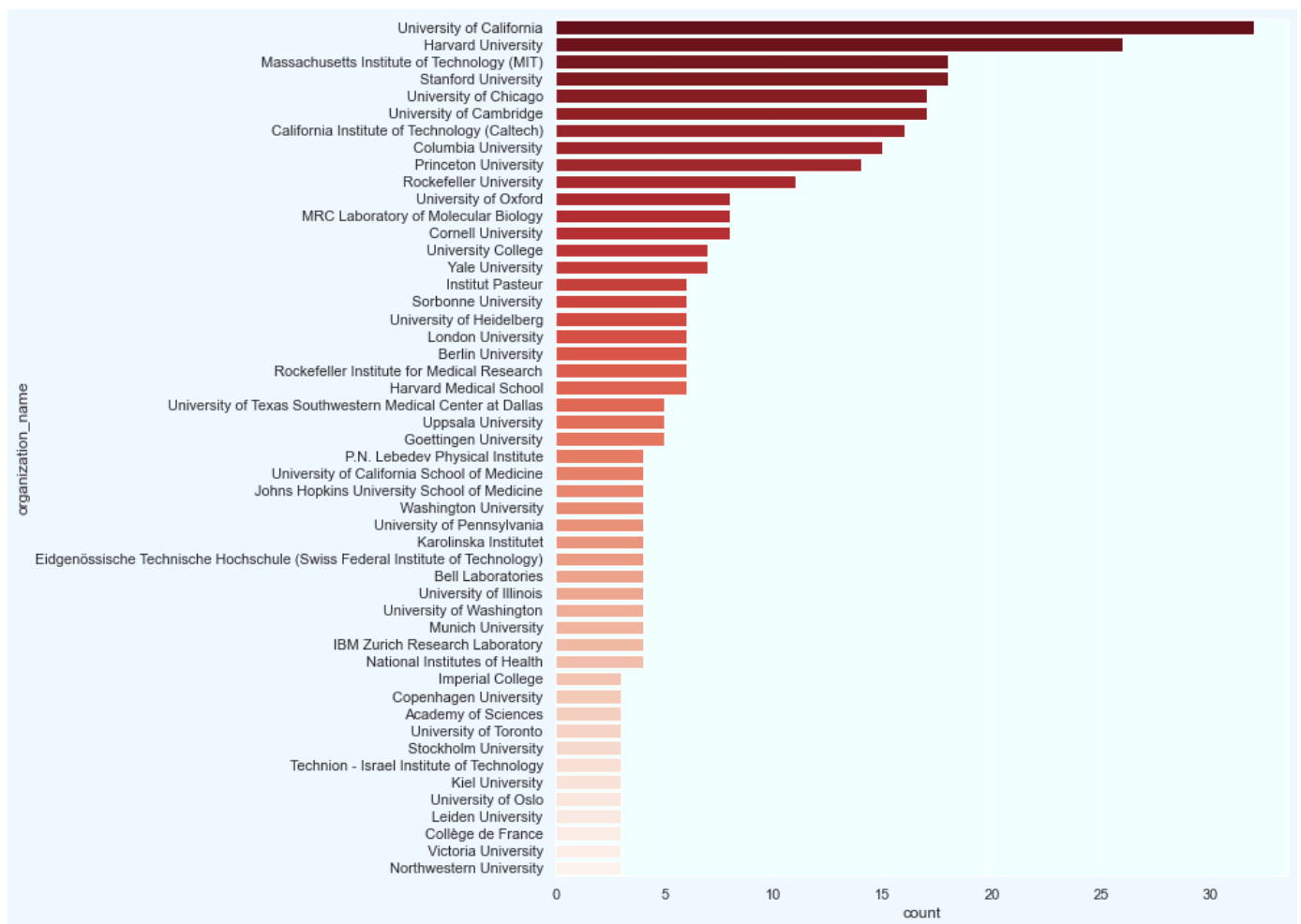
### 13. Country with most prizes in each category

United States of America	43
United Kingdom	7
France	3
Canada	3
Norway	3
Russia	2
Sweden	2
Netherlands	2
India	1
Germany	1
Russian Empire (Russia)	1
Germany (Poland)	1
British Mandate of Palestine (Israel)	1
Cyprus	1
Hungary	1
Finland	1
Scotland	1
Russian Empire (Belarus)	1
British West Indies (Saint Lucia)	1
Italy	1
Austria	1
Name: birth_country, dtype: int64	

### 14. Which country has most prizes in Economics, visualized

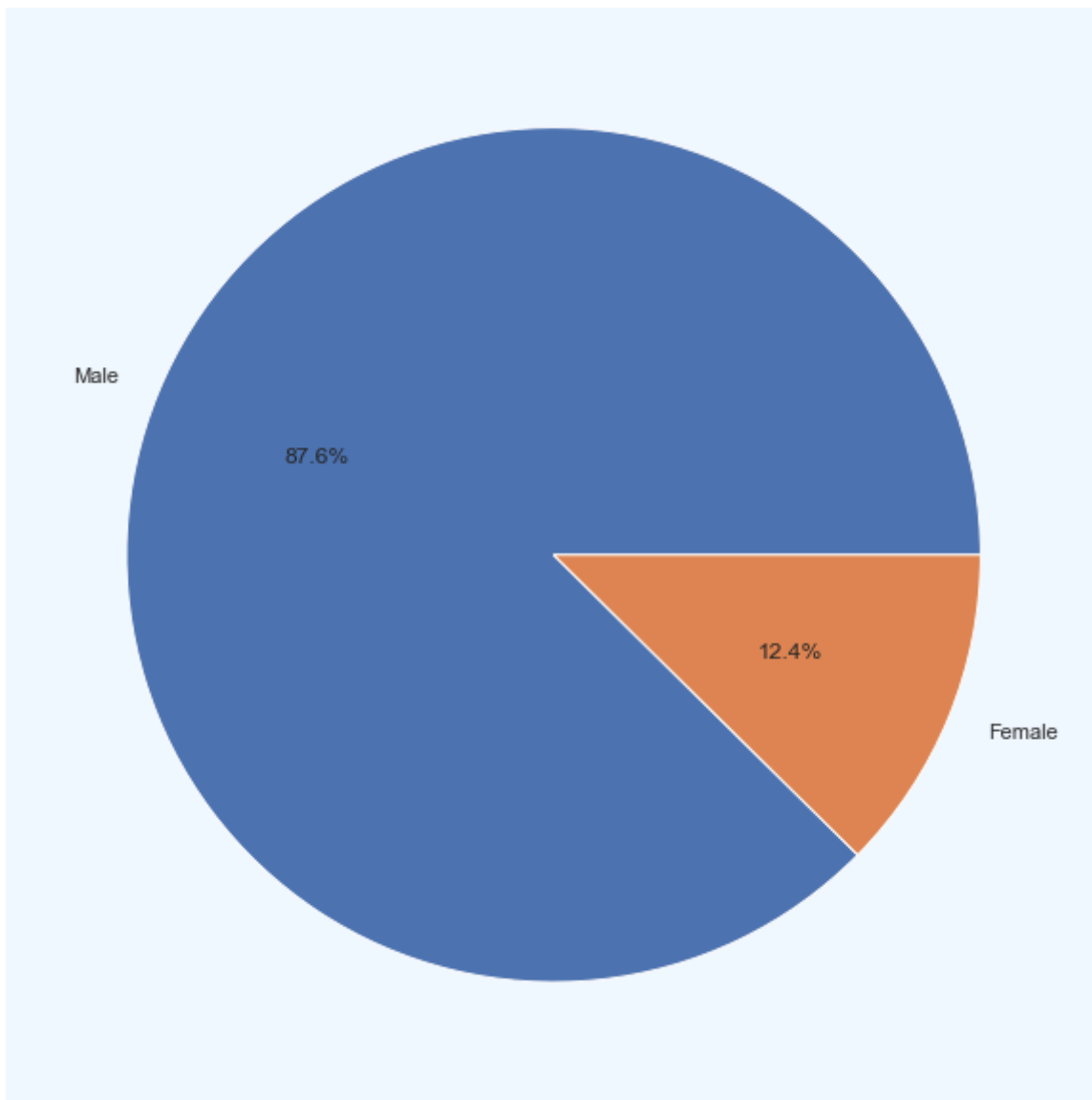


15. Which Organization has largest number of Nobel Laureates?



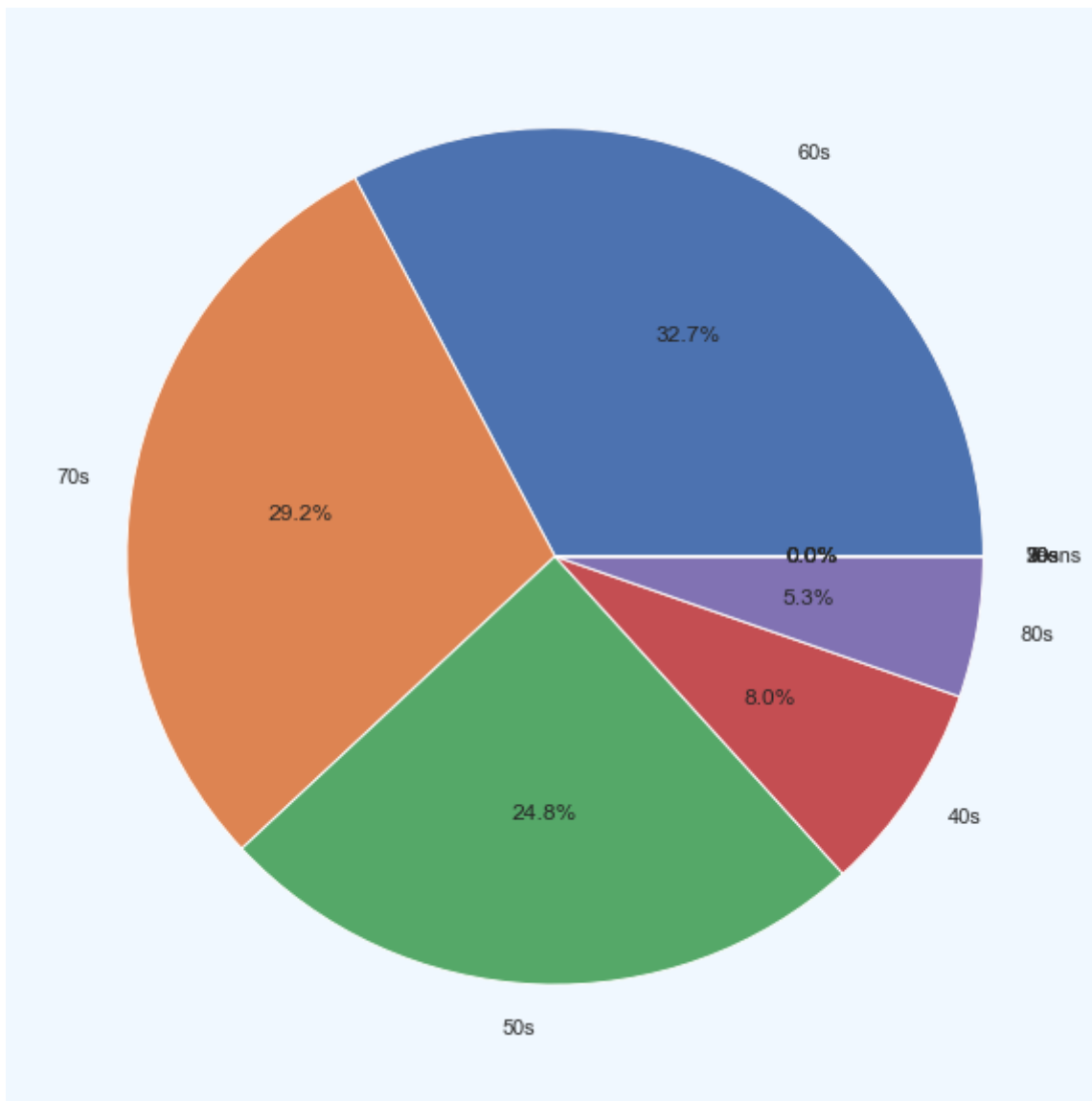
## 16. Age and Gender Analysis

Male 99  
 Female 14  
 Name: sex, dtype: int64



17. Which age category receives the most prizes ?

```
60s      37
70s      33
50s      28
40s       9
80s       6
Teens     0
20s       0
30s       0
90s       0
Name: Age Categorical, dtype: int64
```



## Conclusion:

As of 2016, the youngest winner ever was Malala Yousafzai . She received the prize in 2014 for her struggle against the suppression of children and young people and for the right of all children to education. For the ambitious ones out there, Leonid Hurwicz was 90 years old when he got his prize, so it might not be too late for you. You never know.

By analyzing this data, top universities can determine where they stand in the world in terms of getting the nobel prizes. It determines the prestige of the university.