# AI to discover the impact that certain countries had on Art

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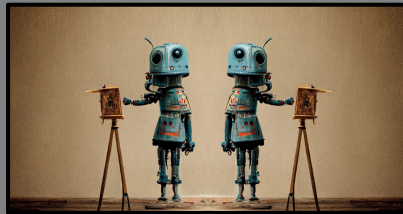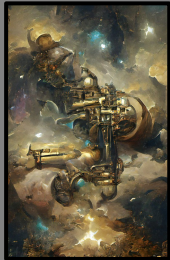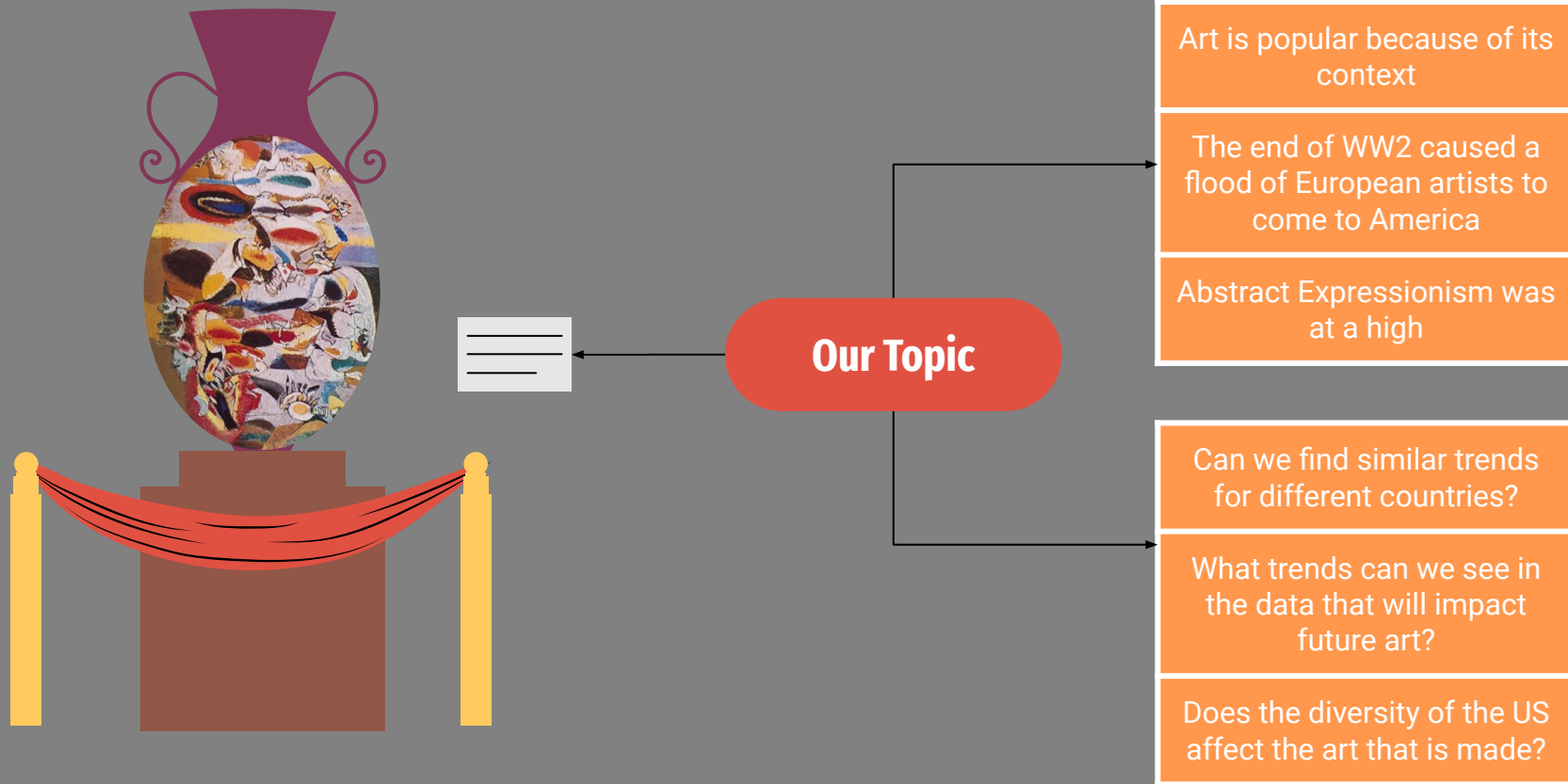
# Table of Contents

# Definition of AI

AI stands for artificial intelligence. It is essentially an algorithm that makes predictions based on data and information that it has already been given. It makes these decisions by using recognizing patterns from data that users have given it.

# What can we learn about art using AI?

# The importance of using AI for Art
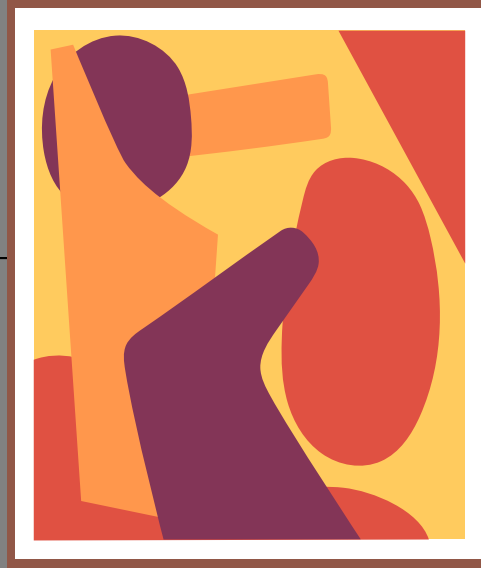


## History of Art
**1**

AI can analyze the big dataset of art history.

## Trend of Art
**2**

AI can easily calculate the means of each years and with find the trend in history of art.

## Prediction of future trend on Art
**3**

From the art trends that AI calculated, it can predict the future trend of art.

## See the whole art
**4**

Human can see the history, the present, and the future of art even when they are not existing on that timeline.

# Positive and Negative impacts of AI in Art

## Pros

**Art is accessible to everyone**

Now everyone make make the art that they never had the skills to make

**Finds trends**

AI can find patterns about existing art that could tell about future trends

**Art can be made at a higher rate**

AI is used in animation to make art in the background and moving characters easier

## Cons

**AI art is winning awards**

This painting was made by AI and won an award over traditional artists

**Traditional art could die out**

Now that the tools to make AI art are public, it could become the new norm

**AI art is using copyright protected work**

Ai is using copyright protected work to learn but able to profit off that amalgamation

# Our Technical Project

In the technical part of our project, we used code to visualize our data. This was done so that we could make our own predictions about the patterns that we saw.

The first step in visualizing our data was to actually get the data. The data we used was from MOMA (The Museum of Modern Art). They had over 130,000 artworks in their dataset but once cleaned, we ended up with just over 100,000 different artworks.

| | A | B | C | D | E | F | G | H | I | J | K | L | M | N |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Title | Artist | Constitue | ArtistBio | Nationalit | BeginDate | EndDate | Gender | Date | Medium | Dimensio | CreditLine | Accession | Classificat |
| 2 | Akari Floo | Isamu No | 4324 | (American | American | 1904 | 1988 | (Male) | 1768 | Paper and | 66 1/4 x 1 | Gift of the | 219.198 | Design |
| 3 | Large Che | Sherrie Le | 3515 | (American | American | 1947 | 0 | (Female) | 1768 | Casein an | 24 x 20" ( | Purchase | 28.2004.2 | Painting |
| 4 | Large Che | Sherrie Le | 3515 | (American | American | 1947 | 0 | (Female) | 1768 | Casein an | 24 x 20" ( | Purchase | 28.2004.3 | Painting |
| 5 | Large Che | Sherrie Le | 3515 | (American | American | 1947 | 0 | (Female) | 1768 | Casein an | 24 x 20" ( | Purchase | 28.2004.4 | Painting |
| 6 | Large Che | Sherrie Le | 3515 | (American | American | 1947 | 0 | (Female) | 1768 | Casein an | 24 x 20" ( | Purchase | 28.2004.5 | Painting |
| 7 | Philadelpl | John Scho | 5267 | (American | American | 1944 | 0 | (Male) | 1805 | Gelatin sil | 9 5/16 x 7 | David H. N | 254.1973 | Photograp |
| 8 | Side Chair | Alvar Aalt | 34 | (Finnish, 1 | Finnish | 1898 | 1976 | (Male) | 1808 | Solid and | 31 3/4 x 1 | Gift of Ma | 277.198 | Design |
| 9 | New York | Lee Friedl | 2002 | (American | American | 1934 | 0 | (Male) | 1809 | Gelatin sil | 7 13/16 x | Purchase | 313.2 | Photograp |
| 10 | Ridin' the | R. Crumb, | 6813, 681 | (American | American | (1943) (19 | 0) (0) | (Male) (M | 1811 | | | Gift of Jos | 481.1986 | Print |
| 11 | Tailpiece ( | Émile Ber | 511 | (French, 1 | French | 1868 | 1941 | (Male) | 1818 | Woodcut, | irreg. com | The Louis | 679.1964 | Illustrated |
| 12 | Vignette ( | Émile Ber | 511 | (French, 1 | French | 1868 | 1941 | (Male) | 1818 | Woodcut, | irreg. com | The Louis | 679.1964 | Illustrated |
| 13 | Vignette ( | Émile Ber | 511 | (French, 1 | French | 1868 | 1941 | (Male) | 1818 | Woodcut, | irreg. com | The Louis | 679.1964 | Illustrated |
| 14 | Headpiece | Émile Ber | 511 | (French, 1 | French | 1868 | 1941 | (Male) | 1818 | Woodcut, | irreg. com | The Louis | 679.1964 | Illustrated |
| 15 | Tailpiece ( | Émile Ber | 511 | (French, 1 | French | 1868 | 1941 | (Male) | 1818 | Woodcut, | irreg. com | The Louis | 679.1964 | Illustrated |
| 16 | GIFTS FRC | Émile Ber | 511 | (French, 1 | French | 1868 | 1941 | (Male) | 1818 | Soft grou | plate 10 | The Louis | 679.1964 | Illustrated |
| 17 | Vignette ( | Émile Ber | 511 | (French, 1 | French | 1868 | 1941 | (Male) | 1818 | Woodcut, | irreg. com | The Louis | 679.1964 | Illustrated |
| 18 | Headpiece | Émile Ber | 511 | (French, 1 | French | 1868 | 1941 | (Male) | 1818 | Woodcut, | irreg. com | The Louis | 679.1964 | Illustrated |
| 19 | Tailpiece ( | Émile Ber | 511 | (French, 1 | French | 1868 | 1941 | (Male) | 1818 | Woodcut, | irreg. com | The Louis | 679.1964 | Illustrated |
| 20 | Vignette ( | Émile Ber | 511 | (French, 1 | French | 1868 | 1941 | (Male) | 1818 | Woodcut, | irreg. com | The Louis | 679.1964 | Illustrated |
| 21 | Headpiece | Émile Ber | 511 | (French, 1 | French | 1868 | 1941 | (Male) | 1818 | Woodcut, | irreg. com | The Louis | 679.1964 | Illustrated |
| 22 | Tailpiece ( | Émile Ber | 511 | (French, 1 | French | 1868 | 1941 | (Male) | 1818 | Woodcut, | irreg. com | The Louis | 679.1964 | Illustrated |
| 23 | Title page | Thomas B | 542 | (British, 1 | British | 1753 | 1828 | (Male) | 1818 | | irreg. com irreg. page 8 9/16 x 5 5/16" (21 x 13.5 cm) Prints: various dimensio | The Louis | 680.1964 | Illustrated |
| 24 | Fables | Thomas B | 542 | (British, 1 | British | 1753 | 1828 | (Male) | 1818 | 323 wood | ns. | The Louis | 680.1964 | Illustrated |
| 25 | Headpiece | Thomas B | 542 | (British, 1 | British | 1753 | 1828 | (Male) | 1818 | | compositi | The Louis | 680.1964 | Illustrated |
| 26 | Tailpiece ( | Thomas B | 542 | (British, 1 | British | 1753 | 1828 | (Male) | 1818 | | irreg. com | The Louis | 680.1964 | Illustrated |
| 27 | Headpiece | Thomas B | 542 | (British, 1 | British | 1753 | 1828 | (Male) | 1818 | | compositi | The Louis | 680.1964 | Illustrated |

# Our Technical Project

Once we had clean data, we were able to code how exactly we wanted to visualize the data. We used the matplotlib and pandas library to help us in this process.

```python
X = [
    1800,
    1825,
    1850,
    1875,
    1900,
    1925,
    1950,
    1975,
    2000
    ]

countries = {}

for name in df['Nationality'].unique() :

    countries[name] = [0,0,0,0,0,0,0,0,0]
#print(countries)

for index,row in df.iterrows() :
    name = row['Nationality']
    year = row['Date']

    for i in range(len(X)):
        if year >= X[i] and (len(X) == i+1 or year < X[i+1]) :
            countries[name][i] = countries[name][i] + 1
            #print(year,i,X[i])



# Set Y varaible
for name in df['Nationality'].unique():
    Y = countries[name]
    for i in Y:
        if (i > 500):
            plt.plot(X,Y, 'o-', label = name)
            break
        else :
            plt.plot(X,Y, 'o-', label = '_nolegend_')

    plt.legend(loc = 'upper left')
```
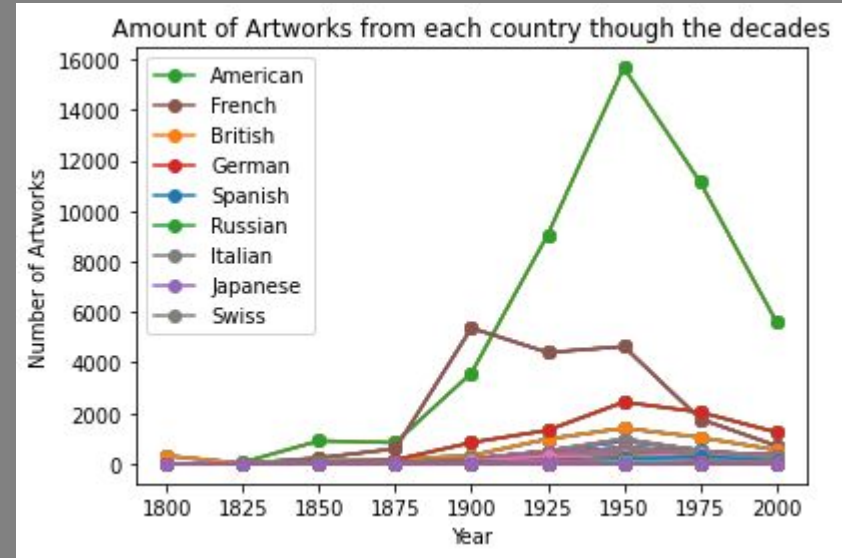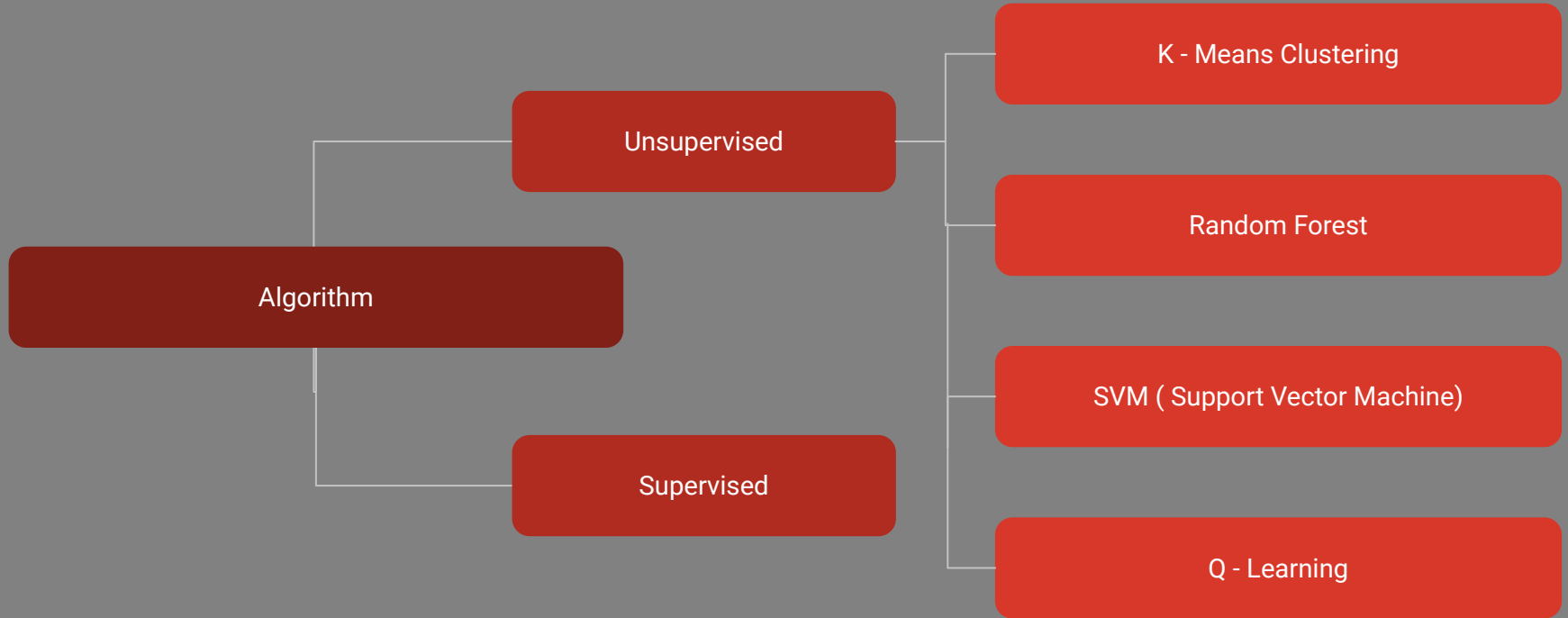
# Our Technical Project

Our final result is this plot that shows the number of artworks based on the nationality of the artist every 25 years since 1800. We chose to only display the top 9 countries with the highest total number of art for easier understanding. From this graph we are told that the US had a peak in art in the 1950s-1980s. This could verify that many american artists were producing more abstract art after WW2, but we would need to do more digging in order to find out if this is definite.



Amount of Artworks from each country though the decades

# Definition of Algorithm

Algorithm

Unsupervised
- K - Means Clustering
- Random Forest

Supervised
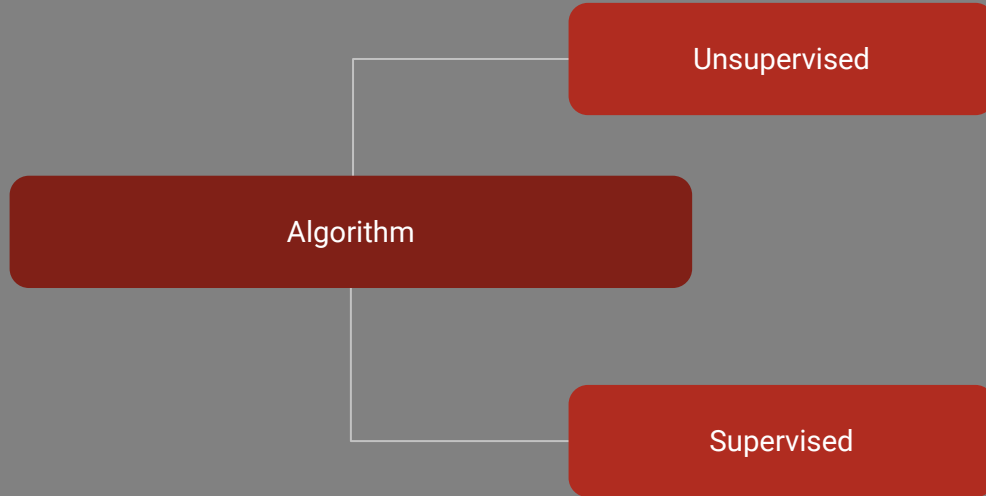- SVM ( Support Vector Machine)
- Q - Learning

# Definition of Algorithm

- Algorithm is a process of getting inputs and printing outputs that follows rule or a saved settings by computer

Algorithm

# Definition of Algorithm

Unsupervised

Algorithm

Supervised

- Unsupervised Learning is a part of Machine Learning algorithm. It analyzes data and cluster unlabeled datasets. It finds new patterns or data groups without human setting them.

- Supervised Learning is different. It requires human to set the labels to analyze datas.

# Definition of Algorithm

K - Means Clustering

Random Forest

SVM ( Support Vector Machine)

Q - Lerning

- K -Means Clustering is a part of unsupervised learning. It produces the clusters from the dataset, calculate the mean value, and shows the clusters close to the mean value.

# What's Next?

We can now see the trends based on their nationality, but to really prove the impact each country had on art, we would need to see the types of art that were made as well. This can be done with K-means clustering. That algorithm can group the styles of art created (cubism, abstract expressionism, minimalism, etc). Once knowing the styles of art, we can definitively tell if Europeans came over after the war to be abstract
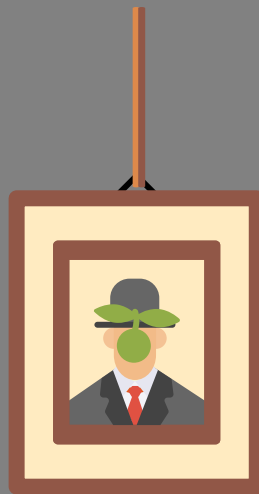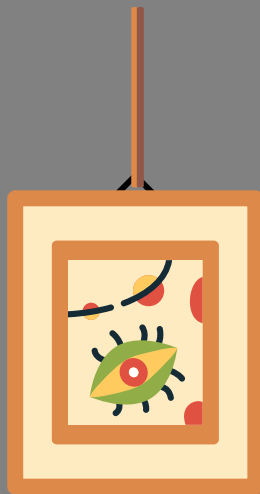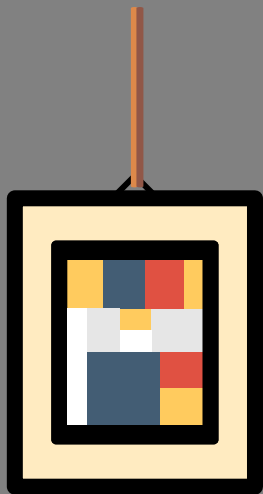
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# Thank you