

Artistic Journey

COM-480 Data Visualization Process Book

Painting is an important form of visual art, By appreciating paintings, we can enrich our spirituality, acquire inspiration, discover a vivid history and so on.

Our website aims to be a nice start point for people who are interested in art by providing an interactive space for people to learn and explore paintings in various styles from 30 famous artists.

BOHAN WANG

XINGHAI WANG

YINGXUE YU

GROUP WYW

The development path

Dataset

- To enjoy the artistic journey, it's better to start with the most renowned artists. So we find one dataset which collects artworks of the 30 most influential painters of all time, and associated with the basic information of each artist.
- In addition, we want to show some interesting features related to time, which are missing in the first dataset. So we find another dataset that collects paintings along with the artist name, creation year, genre, source, style.

Data analysis

- Since we use two datasets, firstly we have to compare their content and delete the duplicate information. And then pick the paintings created by renowned artists.
- To extract the useful information about paintings and artists, we merge the two datasets and build new files which contain paintings' and artists' detail.
- We also do some basic analysis to get familiar with the data structure, such like the style number, years information also on.

Brainstorming

- The first idea is to show all the paintings of the 30 famous artists, but they create a massive amount of artwork in their whole lives. We compress each painting into a point, and visitors could see the painting's detail by clicking the target point.
- The artist's information is also important for our website. So we design a page has 30 moving points that contain the introduction of the artist. Also, visitors could view the information by clicking.
- Each style has its own special features and beauty. We could design an AI style transferring page to transfer a painting into a different style, which also makes our website more interactive.
- We could add some filters to help visitors focus on their favorite part.
- We could add background music and image to make the website more aesthetic.

Final Visualization

- Home Page: This is a basic page used as a cover. Visitors could see the meaning of paintings and start the artistic journey.
- Artworks Page: On this page, visitors could see all the artworks, which are arranged by time and classified by style.
- Painters Page: On this page, visitors could see the 30 renowned artists' information, including their years, bio, and so on.
- AI style transferring Page: On this page, visitors could upload their own picture and transfer it to another weird but interesting version.

The journey begins

Your artistic journey starts from here.

Painting is an important form of visual arts, it can be used to communicate ideas, create a sense of beauty, explore the nature of perception, or express strong emotions. Would you like to learn more the artworks of 30 influential artists?

Start

Home
Artworks
Painters
AI Style Transferring:
The header for users to select any webpage they want.

Music on:
user can choose to switch on or switch off the audio.



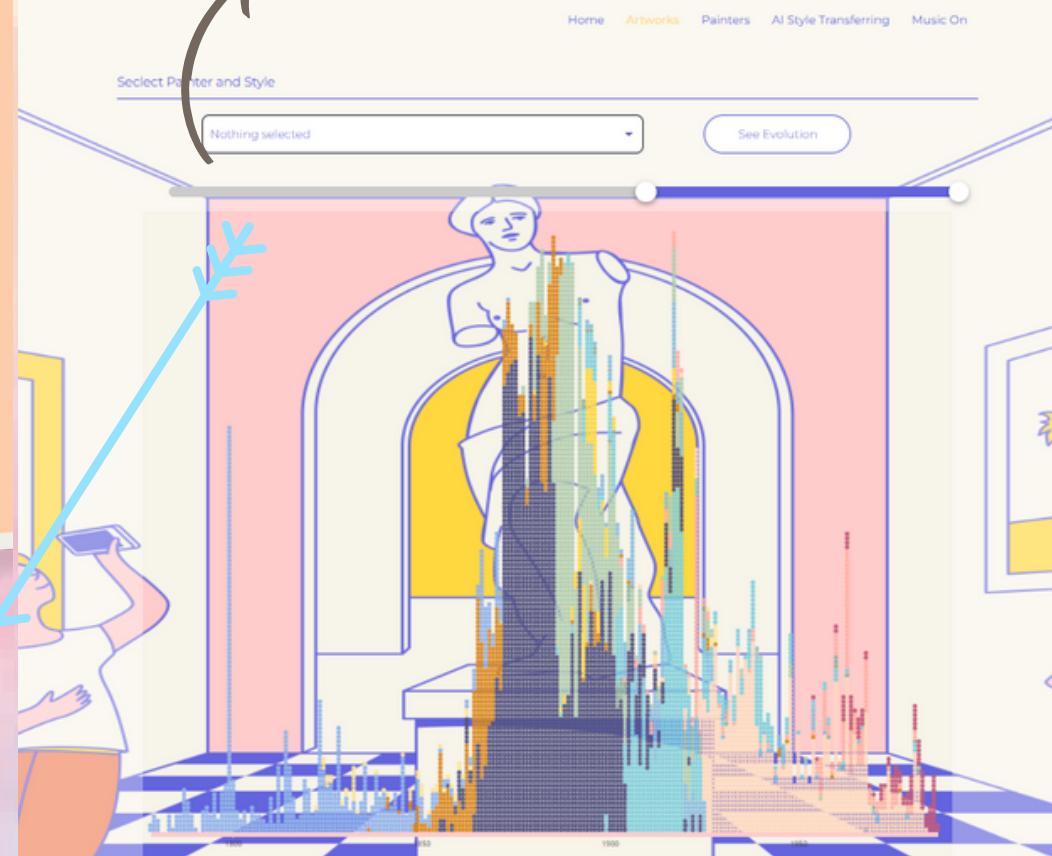
The First Station: Artists

Dear Passengers,

Welcome to the artistic journey! Now you arrive at the first station "Artists". In this station, you could stroll through an exhibition hall. All the picked artworks are displayed as single points here. the fluttering fireflies. You can learn more about the details by choosing one point. And you can only focus on your interesting part by using the filters.

The time bar filter has a slider that allows visitors to choose the time interval they interested in

The filter has a drop-down menu that allows visitors to choose the authors and styles they interested in

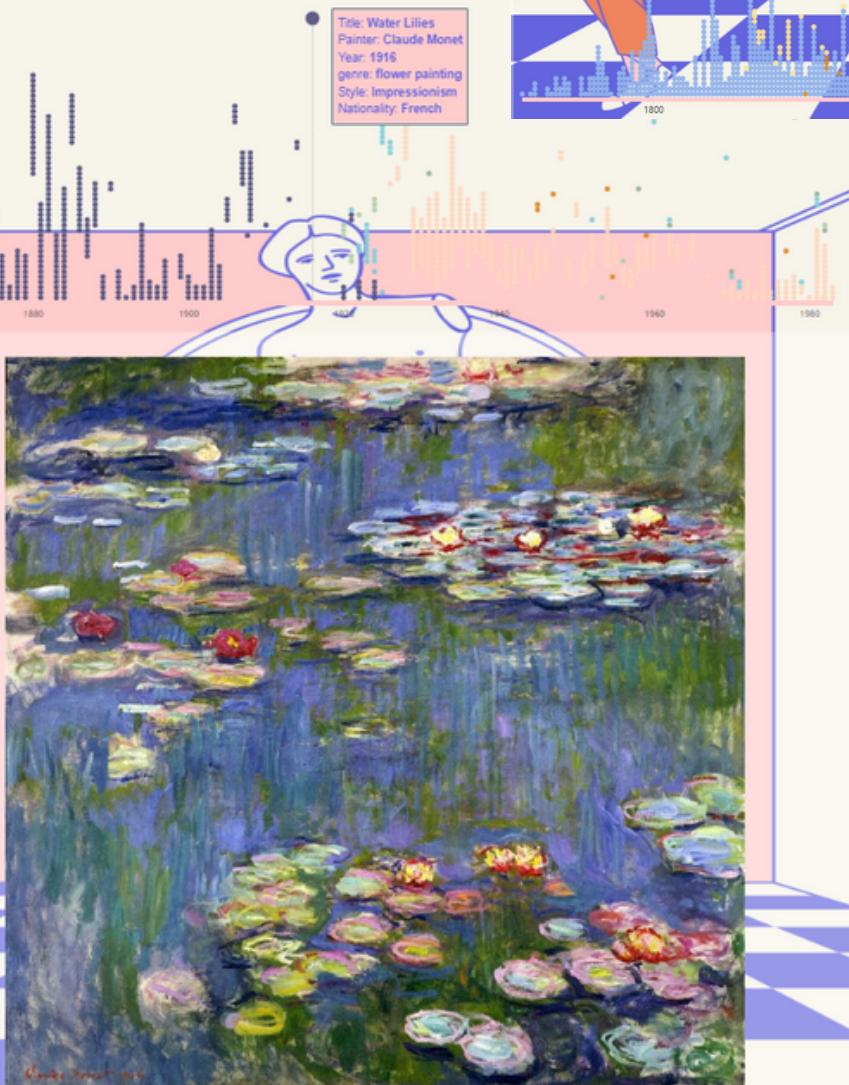




When visitors use the filter to choose one painter they want to know more, the website would display the introduction of artist and the related wikipedia link.

Each dot has a mouse-over event that give visitors the information about the target artworks

The x axis represents the time and all the artworks are arranged by their creation year. Each color represents a style and we assign every point's color according to the style.



When visitors click one artwork point, the point would become bigger to illustrate it has been chosen and show the target picture and related information

Changes since milestone 1:

The special styles of artists in their paintings is not completed, because we consider this part mainly focus on data analysis but not visualization.

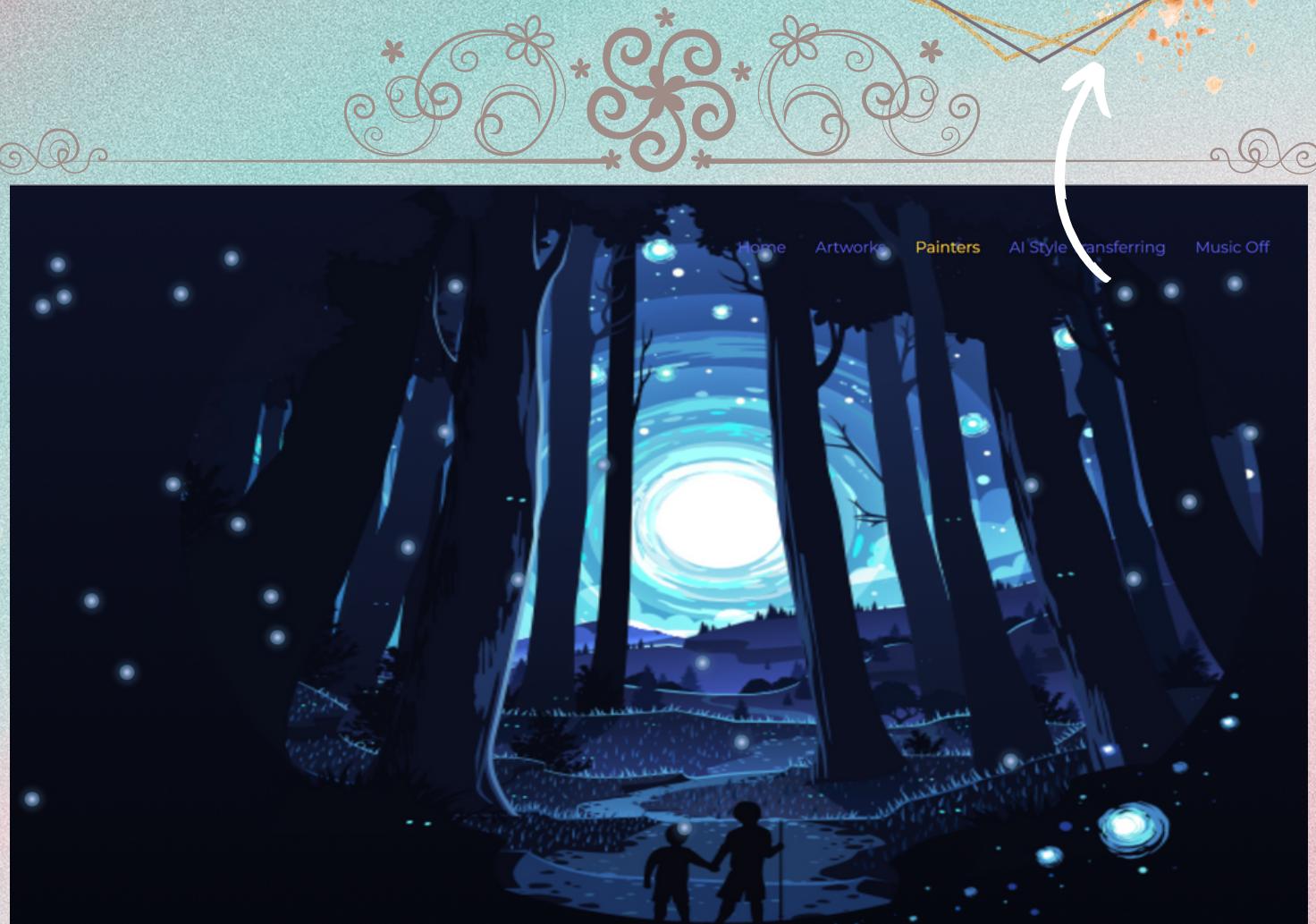


The Second Station: Painters

Dear Passengers,

Now you arrive at the second station "Painters". In this station, you could ramble through a mysterious forest. The artists disguised as the fluttering fireflies. You can learn more about the artists by catching one firefly, she would tell you the author's story. Let's explore them.

Each sparkling firefly contains one painter's story. They move randomly in the forest and have a mouse click event that would give visitors more introduction about the painter.



The Click event



Name: **Claude Monet**

Years: 1840 - 1926

Nationality: French

Bio: "Oscar-Claude Monet (14 November 1840 – 5 December 1926) was a French painter, a founder of French Impressionist painting and the most consistent and prolific practitioner of the movement's philosophy of expressing one's perceptions before nature, especially as applied to plein air landscape painting. The term 'Impressionism' is derived from the title of his painting *Impression, soleil levant* (*Impression, Sunrise*), which was exhibited in 1874 in the first of the independent exhibitions mounted by Monet and his associates as an alternative to the Salon de Paris. Monet's ambition of documenting the French countryside led him to adopt a method of painting the same scene many times in order to capture the changing of light and the passing of the seasons. From 1883, Monet lived in Giverny, where he purchased a house and property and began a vast landscaping project which included lily ponds that would become the subjects of his best-known works. In 1899, he began painting the water lilies, first in vertical views with a Japanese bridge as a central feature and later in the series of large-scale paintings that was to occupy him continuously for the next 20 years of his life."

Wikipedia: http://en.wikipedia.org/wiki/Claude_Monet

The artist's photo

The toolbox gives the information about the painter, including the name, year, nationality, bio and wikipedia link



The Final station: AI Style Transferring

Dear Passengers,

You have arrived at the final station. Recently, Artificial intelligence (AI) can dramatically improve the efficiencies of our workplaces and change our life. Can you imagine your own images are painted with the famous painters' styles? The website is designed to attract users to upload their own photos, select their favorite styles and explore the basic characteristics of each type.

AI Style Transferring

Create personalized style artworks using the power of Artificial Intelligence.

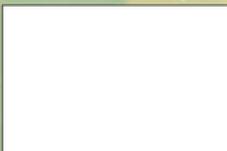
Pick your own photo



Select style



Mix Style



Choose a Style:

You can choose your favor style from the famous artists' styles such as Impressionism, Realism and so on. When you click the style, you can see the painting corresponding to the style.

Final Output

AI Style Transferring

You select style: Realism

Pick your own photo



Select style



Mix Style



You can also download your stylized image

Stylized Image



Download

Pick your own photo:

You can upload your own photo by clicking the element. Then, the below container will display your own photo.

Select style:

This container will display your selected style from the 30 famous artists.

Mix style:

The two containers below 'Mix Style' will display the mixed styled images. The left container can display your own image with the selected style. The right container will display the selected style with the style in your own image.

Choose a Style



Abstract Art



Abstract Expressionism



Analytical Cubism



Art Deco



Art Nouveau



Automatic Painting



Baroque



Cloisonnism



Color Field Painting



Cubism



Divisionism



Early Renaissance

GALLERY

LOOK! OUR CAMPUS EPFL



Original Photo



Realism



Impressionism



Symbolism

Challenges

Dear Passengers,

Thanks for your time! You have finished the artistic journey. Do you keep some famous artists and painting styles in mind?

Hopefully, you could enjoy artistic journey in your life and your future.



We really enjoy the data visualization project. Following are the challenges we faced.

The first challenge is about the dataset and data processing. In order to explore the detailed information and many paintings from the 30 influential artists, we search for two large datasets in Kaggle. Additionally, we merge the two dataset and drop the rows containing NaN style values.

Second, on the technical side, the visualization of the artist's time line is very challenging. The basic sketch of the visualization is that every dot is a painting created by an artist and the different colors represent different styles. The artworks are arranged by creation time and artworks created in the same year would be placed in the same column. There is a year range slider in the bottom which would be used to filter the time period. And we add one filter form that filters paintings by artists, or painting styles to help visitors focus on what they are interested in. However, our dataset containing about 10, 000 images is very large. At first, we can not plot more than 200 points in the visualization due to the storage issue and the speed issue. To solve this issue, we store the coordinates directly (e.g., calculate them in python and save). Apart from this, we initially plan to display the artist's painting when clicking one dot. Instead of storing about 10, 000 images in the local machine, we upload the images to Google Drive. Therefore, when user clicks one dot, just the corresponding painting will be downloaded from Google Drive.

Third, the part about style transformation is quite difficult. We initially tried using ml5.js to train deep learning model for style transferring. However, it took 2~3 hours to train a model for a style transformation. We need to train 30 deep learning models, because we have 30 styles. Considering the deadline of the project, we use the deep learning models of magenta.js. Then, we focused on utilizing deep learning to do personalized style transformation.

Finally, it is hard to keep the storytelling concise and interesting, because artwork is very broad and has a long history. To make the project fascinating and absorbing, we focus on the styles and introduction of 30 most influential painters. In addition, we do the visualization including background image and plot based on artwork.

Peer Assessment

Yingxue Yu

- Design the Artworks webpage.
- Visualize the d3 plot in the Artworks webpage.
- Host images on Google Drive.
- Help to design the page structure.
- Data Processing and calculate the coordinates of dots in Python for time line plot.
- Screencast: 2 min video



Xinghai Wang

- Design the Painters webpage.
- design the animation for the Artworks webpage and Home webpage.
- Host images on Google Drive.
- Add music for each webpage.
- Prepare the necessary data file
- Process book



Bohan Wang

- Design the AI Style Transferring webpage.
- Design the Home webpage
- Realize the filter functions for the slider and select box in Artworks webpage
- Do the data analysis
- Process book

