CS6730 Project Topic Proposal
Tracing the Emotional and Chromatic Journeys of Artists

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1. What is the problem and domain being addressed?

We aim to delve into the intertwined worlds of artists' life and their artworks. Specifically, we are addressing the perception that the lives of modern artists, as represented in the Museum of Modern Art (MoMA) collection, have been more cheerful or tragic than the classical artists we often associate with melancholy tales, such as Van Gogh. Alongside, we will be tracing the predominant colors in their artwork to infer if there's any correlation between their life journey, emotion, and their styles, in terms of color. We also intend to associate colors in a broader context through time, and explore the dominant colors used over the past century, hypothesizing that periods like WWII might exhibit a preference for darker shades.

2. Where is the data coming from and what are its characteristics?

a. The Museum of Modern Art (MoMA) Collection: This data set has two part. The first Artists dataset contains 15,243 records, representing all the artists who have work in MoMA's collection. Another dataset contains 140,848 records, representing all of the works that have been accessioned into MoMA's collection. Ideally we could narrow down to around 500 artists by filtering the fields and mannual selection.

ConstituentID	41
DisplayName	Berenice Abbott
ArtistBio	American, 1898–1991
Nationality	American
Gender	Female
BeginDate	1898
EndDate	1991
Wiki QID	Q231861
ULAN	500020631

Title	...
Artist	...
ArtistBio	...
Nationality	...
Gender	...
Date	1896
Classification	Architecture
DateAcquired	1996-04-09
ThumbnailURL	<image URL>

b. WikiArt Database: Similar to the MoMA, this dataset consist of 128 well-known artists and 81,444 pieces of visual art in the follwing format:

image	artist	genre	style
<image>	...	...	...

For the image analysis, we plan to use the median cut quantization clustering algorithm similarly to the Game of Thrones project.

c. ChatGPT and Wikipedia: We aim to explore the relation of artists' style and their life experiences. However, there is no such data describing the life of artists with structured format and visualizable metrics. To expand this textual context of our project, we want to leverage ChatGPT to generate textual data around the life events and "happiness score" of artists. By prompting GPT to output a structured JSON, we have examined around 19 valid examples using gpt-4 API (out of 30 names, where 11 names ChatGPT does not know well).

The prompt and generated data is attached in Section A.

Generating the JSON for Vincent van Gogh takes around $0.035. This is cost-effective when considering up to 1000 artists. We had also experimented with gpt-3.5-turbo which is priced at roughly 1/25 the cost of gpt-4, but the quality did not match that of gpt-4.

If we (or audiences) are interested in a new artist from MoMA collection, dumping Wikipedia into GPT might also be a good option.

3. **Who would be interested in understanding this data better?**

   a. **General public:** People can get insights into the emotional journeys of artists over time and learn about art history, and cultural studies. For the LLM generated part, it might be interesting to examine the visualization and compare it with one's own knowledge, approaching it with a dose of skepticism.

   b. **Visualization Designer & Data Analysts:** Apart from the data visualization itself, we also consider it an experiment on how technologies like GPT could assist to expand the textual context for visual analytics on the missing data that we are really interested in.

4. **What would these people want to know about the data and what kinds of questions would they like to have answered?**

   a. How do the emotional life trajectories of modern artists compare with classical ones? Can we correlate an artist's palette with significant life events or emotional states?

   b. How has the color palette changed over time, and different art movements and eras?

   c. Are LLMs trustworthy enough to generate textual data for a presentation-purposed visualization? How can we leverage LLMs to expand the textual context for visual analytics on the missing data that we are really interested in?

A. Appendix

Below is the prompt and 6 examples from generated JSONs. The first 3 are well-known artists from WikiArt, the last 3 from MoMA collection. Names are randomly selected, except for Van Gogh.

A.A. Prompt

You're a helpful and clever assistant who knows artists and art history well.

Your input will always be a single name of artist, and your output must always be in JSON format with the following structure:

```
type LifePeriod = {
    start: number,      // four digit year
    end: number,        // four digit year
    happiness: number,  // 0-10, 0 for tragic, 5 for normal, 10 for happy. If he had disease,
war, or his loved ones died, happiness should be lower than 5.
    location: string,   // city
    events: string[]    // list 0-2 important events, e.g. "met his wife", "won a prize"
}

type ArtistLife = {
    name: string,
    lifePeriods: LifePeriod[], // an array consisting of detailed 3-10 life periods, in
chronological order, as detailed as possible
    genre: string[],           // list of 1-3 genres that he's known for
}
```

If you don't know well about the artist, reply with "{}".

A.B. vincent-van-gogh

```json
[
  {
    "name": "Vincent Van Gogh",
    "lifePeriods": [
      {
        "start": 1853,
        "end": 1872,
        "happiness": 6,
        "location": "Zundert, Netherlands",
        "events": [
          "Born into a family of a pastor"
        ]
      },
      {
        "start": 1873,
        "end": 1876,
        "happiness": 5,
        "location": "London, England",
```

```json
      "events": [
        "Working as an art dealer",
        "Fell in love for the first time"
      ]
    },
    {
      "start": 1877,
      "end": 1880,
      "happiness": 4,
      "location": "Etten, Netherlands",
      "events": [
        "Devoted himself to god",
        "Was dismissed from his job"
      ]
    },
    {
      "start": 1881,
      "end": 1885,
      "happiness": 3,
      "location": "The Hague, Netherlands",
      "events": [
        "Started his career as an artist",
        "His father passed away"
      ]
    },
    {
      "start": 1886,
      "end": 1888,
      "happiness": 4,
      "location": "Paris, France",
      "events": [
        "Moved to Paris and met impressionist artists",
        "Enhanced his bright colour palette"
      ]
    },
    {
      "start": 1888,
      "end": 1889,
      "happiness": 2,
      "location": "Arles, France",
      "events": [
        "Cut off his ear during a mental breakdown",
        "Admitted to a mental health hospital"
      ]
    },
    {
      "start": 1890,
      "end": 1890,
      "happiness": 1,
      "location": "Auvers-sur-Oise, France",
      "events": [
        "Shot himself and died two days later"
      ]
    }
  ],
  "genre": [
    "Post-Impressionism",
    "Symbolism",
    "Realism"
  ]
```

```
    }
  ]
```

A.C. rembrandt

```
[
  {
    "name": "Rembrandt",
    "lifePeriods": [
      {
        "start": 1606,
        "end": 1631,
        "happiness": 5,
        "location": "Leiden, Netherlands",
        "events": [
          "studied at Latin school and then at the University of Leiden"
        ]
      },
      {
        "start": 1631,
        "end": 1642,
        "happiness": 7,
        "location": "Amsterdam, Netherlands",
        "events": [
          "married Saskia van Uylenburgh",
          "achieved financial success"
        ]
      },
      {
        "start": 1642,
        "end": 1656,
        "happiness": 4,
        "location": "Amsterdam, Netherlands",
        "events": [
          "death of his wife",
          "declared bankruptcy"
        ]
      },
      {
        "start": 1656,
        "end": 1669,
        "happiness": 3,
        "location": "Amsterdam, Netherlands",
        "events": [
          "lived and worked in near poverty",
          "death of his son Titus"
        ]
      }
    ],
    "genre": [
      "Portrait",
      "Self-Portrait",
      "Historical"
    ]
  }
]
```

A.D. claude-monet

```json
[
  {
    "name": "Claude Monet",
    "lifePeriods": [
      {
        "start": 1840,
        "end": 1857,
        "happiness": 7,
        "location": "Paris, France",
        "events": [
          "started drawing caricatures"
        ]
      },
      {
        "start": 1857,
        "end": 1861,
        "happiness": 5,
        "location": "Le Havre, France",
        "events": [
          "His mother passed away",
          "met Eugene Boudin who introduced him to plein-air (outdoor) painting"
        ]
      },
      {
        "start": 1862,
        "end": 1870,
        "happiness": 6,
        "location": "Paris, France",
        "events": [
          "joined the studio of Gleyre",
          "met Pierre-Auguste Renoir, Frederic Bazille, and Alfred Sisley"
        ]
      },
      {
        "start": 1870,
        "end": 1883,
        "happiness": 7,
        "location": "Argenteuil, France",
        "events": [
          "painted Impression, Sunrise"
        ]
      },
      {
        "start": 1883,
        "end": 1926,
        "happiness": 5,
        "location": "Giverny, France",
        "events": [
          "often suffered from depression",
          "created the Water Lilies series"
        ]
      }
    ],
    "genre": [
      "Impressionism"
    ]
  }
]
```

A.E. david-burliuk.json

```json
[
  {
    "name": "David Burliuk",
    "lifePeriods": [
      {
        "start": 1882,
        "end": 1910,
        "happiness": 6,
        "location": "Kharkiv, Ukraine",
        "events": [
          "studied at art schools in Kazan and Odessa"
        ]
      },
      {
        "start": 1911,
        "end": 1917,
        "happiness": 5,
        "location": "Moscow, Russia",
        "events": [
          "co-founded the avant-garde movement 'Der Blaue Reiter'",
          "participated in exhibitions of Russian Futurist"
        ]
      },
      {
        "start": 1918,
        "end": 1922,
        "happiness": 4,
        "location": "Vladivostok, Russia",
        "events": [
          "fled civil war in Russia"
        ]
      },
      {
        "start": 1922,
        "end": 1967,
        "happiness": 7,
        "location": "New York, United States",
        "events": [
          "emigrated to the United States",
          "participated in exhibitions of Russian art in America"
        ]
      }
    ],
    "genre": [
      "Futurism",
      "Neo-Primitivism",
      "Post-Impressionism",
      "Cubism"
    ]
  }
]
```

A.F. henri-evenepoel.json

```json
[
  {
    "name": "Henri Evenepoel",
```

```
    "lifePeriods": [
      {
        "start": 1872,
        "end": 1899,
        "happiness": 4,
        "location": "Nice, France",
        "events": [
          "Born in Nice"
        ]
      },
      {
        "start": 1893,
        "end": 1894,
        "happiness": 6,
        "location": "Brussels, Belgium",
        "events": [
          "Studied at the Académie Royale des Beaux-Arts"
        ]
      },
      {
        "start": 1894,
        "end": 1897,
        "happiness": 5,
        "location": "Paris, France",
        "events": [
          "Joined the atelier of Gustave Moreau and met many future Fauvist painters",
          "Impressed Moreau with his talent"
        ]
      },
      {
        "start": 1897,
        "end": 1899,
        "happiness": 5,
        "location": "Paris, France",
        "events": [
          "Exhibited his work in the Salon des Indépendants",
          "Shared a studio with fellow Belgian artist Théo van Rysselberghe"
        ]
      }
    ],
    "genre": [
      "Post-Impressionism",
      "Realism"
    ]
  }
]
```

A.G. roger-fenton.json

```
[
  {
    "name": "Roger Fenton",
    "lifePeriods": [
      {
        "start": 1819,
        "end": 1843,
        "happiness": 7,
        "location": "Lancashire, England",
        "events": [
```

```json
        "His family was affluent and well established"
      ]
    },
    {
      "start": 1843,
      "end": 1850,
      "happiness": 6,
      "location": "London, England",
      "events": [
        "Studied law, but developed interest in painting and later photography"
      ]
    },
    {
      "start": 1850,
      "end": 1855,
      "happiness": 5,
      "location": "London, England",
      "events": [
        "Founded Photographic Society, later Royal Photographic Society"
      ]
    },
    {
      "start": 1855,
      "end": 1856,
      "happiness": 4,
      "location": "Crimea",
      "events": [
        "Photographed Crimean War, experienced the harsh realities of war firsthand"
      ]
    },
    {
      "start": 1856,
      "end": 1869,
      "happiness": 5,
      "location": "London, England",
      "events": [
        "Good career in photography, but ultimately returned to law due to declining health"
      ]
    }
  ],
  "genre": [
    "Photography",
    "War photography"
  ]
}
]
```