Art Institute of Chicago
Online Collection
Eye-tracking study
Research team

Elena Villaespesa
Assistant Professor

Madhav Tankha
Visiting Assistant Professor

Elena Korshakova
Research Assistant
M.S. Information Experience Design

Craig MacDonald
Associate Professor

Marta Miklaszewicz
Research Assistant
M.S. Information Experience Design

Seth Crider
Research Assistant
M.S. Data Analytics and Visualization
Introduction
This study aims to provide insights into the **browsing experience** of one particular type of user that visits art museum online collections: **artists** and creative professionals, defined for this research as users that have an education and/or professional connection with art or other creative industries.

- Understand how artists use the internet to find inspiration
- Assess the impact of images and visual content
- Layout effectiveness
- Evaluate the usefulness of browsing features
Inspiration—There’s a Filter for That and More

https://www.artic.edu/articles/773/inspiration-theres-a-filter-for-that-and-more
02 Methodology

Eye-tracking study and data collection process overview.
Methodology

**Moderated user testing** sessions with **eye-tracking** (Tobii)

User Group:

- 10 participants (artists or visual art students, avg 11 years of art experience)
- Different age groups (18-50)
- Visited at least 1 museum in the last year
- Frequent museum visitors but not frequent museum website visitors
- They use internet and social media to look for inspiration (e.g. Instagram, Pinterest, Dribble, Behance)
- None had visited the AIC’s website before
Primary Persona

Angel is a painter from NYC with 11 years of experience in visual arts. She frequently visits museums in the city to find artistic inspiration.

**BIO**

Angel is a painter from NYC with 11 years of experience in visual arts. She frequently visits museums in the city to find artistic inspiration.

**MOTIVATIONS**

- Seeing new exhibitions or collections as soon as they open.
- Being able to revisit the same collection for inspiration.
- Quickly browsing through acclaimed artists work when lacking creativity.
- Museums with large, diverse collections.

**SKILLS**

- Mobile Apps
- Social Media
- Computer Literacy

**NEEDS**

- Museum websites that have a lot of visual content to browse.
- Easy browsability reminiscent of social media.
- Easily discoverable artistic inspiration.
- Websites that do not require a steep learning curve.
**User Test**

1. Pre-test interview to obtain information about the users’ expectations and habits using museum online collections
2. Calibration of eye-tracking system
3. User test where the moderator asked the participant to use the online collection of the AIC’s website ([https://www.artic.edu/collection](https://www.artic.edu/collection)) for ten minutes and look for five artworks that could inspire their own creative work
4. Retrospective think aloud with the video screen recording including the eye-gaze.
5. Post-test interview to compile final thoughts and impressions of the website
6. Post-test questionnaire to gather feedback about the specific features available on the AIC’s online collection. (“Please rate how important the following features are for the online collection: search, filters, tags and sorting options)
Data Collection & Analysis

Sources:
- Gaze replays collected during eye-tracking
- Think aloud data
- Post-test questionnaire

Generated visualizations:
- Heatmaps
- Gaze plots
- AOI (Areas of interest)
Findings

Overviews of discovered usability pain points after aggregation and analysis of collected data.
Key Findings

- Impact of visual elements
- Suggested tags or terms to kickstart browsing journey
- Available options are overwhelming without hierarchy
- Unclear language of the filters
- Browsing behavior changes over time
1. Browsing Behavior

What were users looking at and what does this tell us
“Masonry layout is a [webpage] layout method where one axis uses a typical strict grid layout, most often columns, and the other a masonry layout. On the masonry axis, rather than sticking to a strict grid with gaps being left after shorter items, the items in the following row rise up to completely fill the gaps”. (Mozilla Developer CSS)

The AIC Collection page, and other popular social media sites use this layout. This impacts how users view the page content.
Importance of Visual Elements

In observing the test participants, some patterns in their viewing behavior became apparent through the gaze plots:

- All test participants looked at the artwork image first and afterwards, if the artwork brought their attention, then they looked at the text below it.
- Zig-zag eye movement
- Skipping more items as they scrolled down
Importance of Visual Elements

- The attention on the artwork images takes place on the landing page, search results page and also on the artwork page.
- Users spend time looking at the images located at the top of the page.
- Some of the participants clicked to see the details of the artworks using the zoom feature.
Tags are Effective to Start a Browsing Journey

- All participants looked first at the tags under the search bar and afterward moved on scrolling the page down.
- Most viewed the first two tags (*cityscapes* and *impressionism*)
- Followed by *pop art* which may be due to the popularity of the tag thumbnail image
Tags are Effective to Start a Browsing Journey

Some of the users clicked on these suggested tags and commented on their usefulness to start discovering the collection:

“I like that they have these categories (...) I thought it was really helpful. It helps you to get a starting point, especially when you don’t know what you are looking for”.

“I actually was looking at those filters. I think it is helpful to have them up there (...) Having them with a little thumbnail, like an example of a filter, look at this by color, by date, by region”.
The suggested options in the filters were the ones primarily used by users.

- Suggestions in the filters helped users to browse the collection.
- When users clicked on the filters on the left the majority of users selected a suggested option instead of typing a keyword in the search box.
Focused and Unfocused Browsing

**Focused Browsing**
- Participants who realize what they are interested in
- Established familiarity with layout and features of page
- Using filters or searching for specific items using search bar

**Unfocused Browsing**
- Participants without clear direction
- Looking to get inspired
- Unfamiliar with the features of the page
- Scrolling on page
Search and Filters are Not Crucial

- Majority of the participants did not use filters
- Only 2 participants entered a search term in the top search box

“When I’m browsing I do not put any words in a search bar, I just keep scrolling down. (...) I’m quite sure the order doesn’t change (...) These are probably their most popular paintings. If I’m just for pleasure, I would sort of expect to have every time something different”.

“I saw them (filters), but I didn’t honestly take a look at them, because I was not looking for something specific. (...) For general browsing, I didn’t have a need to use the filters”.

“If I use these filters, I’m gonna be like not seeing stuff that I would otherwise see. If I was to look for something specific like modernist art from Italy that was orange, I would have used filters for it”
2. Browsing Features

Understanding which features are useful for browsing experience
Evaluating What is Useful for the User

Quantitative data was collected regarding the number of fixations and interactions with the different features during the user testing sessions. Data about the usefulness of these features were gathered in the post-test questionnaire where users rated them on a scale of 1-5 on how important the features were for the online collection. This data allowed the researchers to understand the elements that got viewed, that users clicked on, and that the users value.
Features Users Looked At & Interacted With

- Tags
- Search bar
- Some users did not notice Filters, but from available options, filters in the middle were most looked at
  - Medium
  - Classifications
  - Artists
  - Subjects
  - Styles
Feature Importance

Number of fixations:
- 0
- 20
- 40
- 60
- 80
- ≥ 100
3. Layout Effectiveness

Evaluating usability of the landing page and search results’ layout
Discoverability Issues

Features lacking visibility:
- Filters on the search page
- Text and object metadata on the artwork page
Filter categories were not clear for users:

“Classifications I don't really understand. Styles, I do understand”.

About the styles category: “This is probably something kind of ... everything kind of .. mixed together (...) this is definitely a geographic region... and this is definitely style (...) I feel this is something all mixed together. Confusing, so I didn’t look carefully, I just clicked on the first one”.

Participants felt overwhelmed by the number of available options:

“I didn’t understand for example Medium. Color, I didn’t look for Colors. Maybe it is better to have these categories inside, deeper in the categories (...) So first you get one category and then you get more filters”

“It was a little confusing. It was too much to understand. This is very similar to any job portal that I’ve been to. They have these classifications, but somehow this is not what I expected. I thought there are too many filters to add, and then it is very filter based”
Future considerations for the Art Institute of Chicago in order to improve the overall user experience.
Recommendations

Guided Browsing for Increasing Engagement

Visual Content Attractiveness

Personalized Browsing Experience

Clear Language and Page Architecture
Guided Browsing for Increasing Engagement

- Make browsing features more prominent on the artwork page
- Guide users through a variety of available collections and show potential artworks they might be interested in
  ○ *Note: artwork suggestions are based on previous user activity*
Visual Content Attractiveness

- Attractiveness increased users' engagement
- Design of visual elements are crucial to enhance the perception of content and *increase user interest*
  - Home page
  - Artwork page
  - Thumbnails in tags
  - Other visual elements
Different types of museum website users seek different browsing experiences
Create **personalization** based on answer to question about website visit goals
Cater experience to professionals vs inspiration seekers vs etc.
Clear Language and Page Architecture

● Avoid overwhelming and provide users with a **comfortable navigation experience**
  ○ Simple web-page architecture
  ○ Minimalist page design
  ○ Clear hierarchy of the feature options
● Plain language and clear phrasing help users **easily understand** and scan text