Drawing from the Crowd: A Citizen Science Platform for Mapping *Ukiyo-e* Geography

集合知を描く: 市民科学浮世絵マッピングプラットフォーム

NSIC 2024 Midterm Presentation Webinar

The Nippon Social Innovators Collaboration (NSIC)

November 18, 2024 17:00 JST

THE NIPPON FOUNDATION

For Social Innovation

How does this print make you feel?

Which memories arise?

Utagawa Hiroshige, Autumn Moon on the Tama River, ca. 1838

Overview

- Brief description of project, its goals
- Presenting 3 key findings
  - A. Citizen Science Projects in Japan
  - B. Using AI for working with large collections of digital images
  - C. Presenting the platform model mockup
- Inviting feedback on AI website and platform model
- Q+A

Project Goals

1) **Prototype a platform** on which volunteers (citizen scientists) help to georeference selected views of Japan in print (*ukiyo-e*)

2) **Finalise the wireframe** for this platform, i.e. a visual interface guideline that shows the **layout** of the planned interface, **component connections** and **content** for a platform on which volunteers can interact with Japanese prints and a three-dimensional model of Japanese topology

3) Begin to leverage the **comparison between topographical model and printed images** over time

4) Create a **shared knowledge base** on citizen science projects at the intersection of languages and research interests (to be shared with TNFSA)

A. Citizen Science Projects in Japan

A. Citizen Science in Japan: Projects

- Japanese projects mostly written about in English-language scholarship
- Existing projects focus on quantitative data collection (ecology, public health)

→ unique position + potential
as we focus on qualitative responses and cultural heritage!

A. Citizen Science in Japan: Contributors

- Build on existing communities of interest, like birdwatchers or naturalists
- Effectively use participant ranking to encourage friendly competition
- Engage school groups as key participants

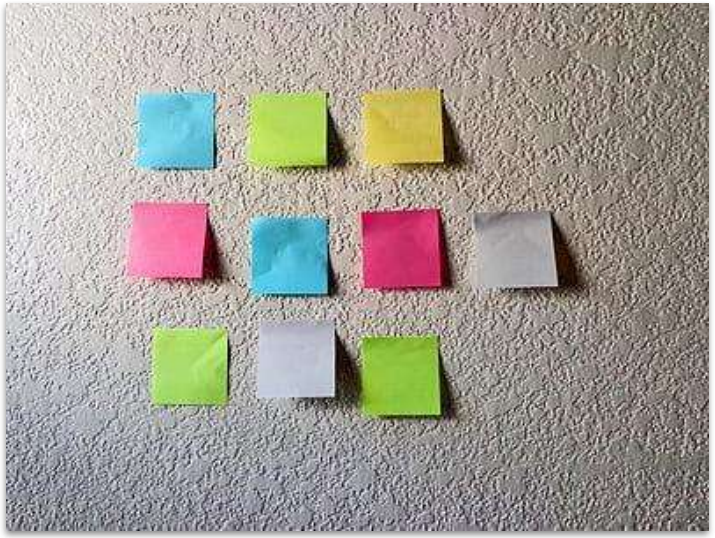
A. Contributors: Which questions can we ask our users?

Technical:

- Geo-localisation of printed views on the map ('standpoint' of print designer / viewed area)

Qualitative:

- Affective impact
- Place-related memories
- Comparative observations to today
- Identification of image features (tagging)



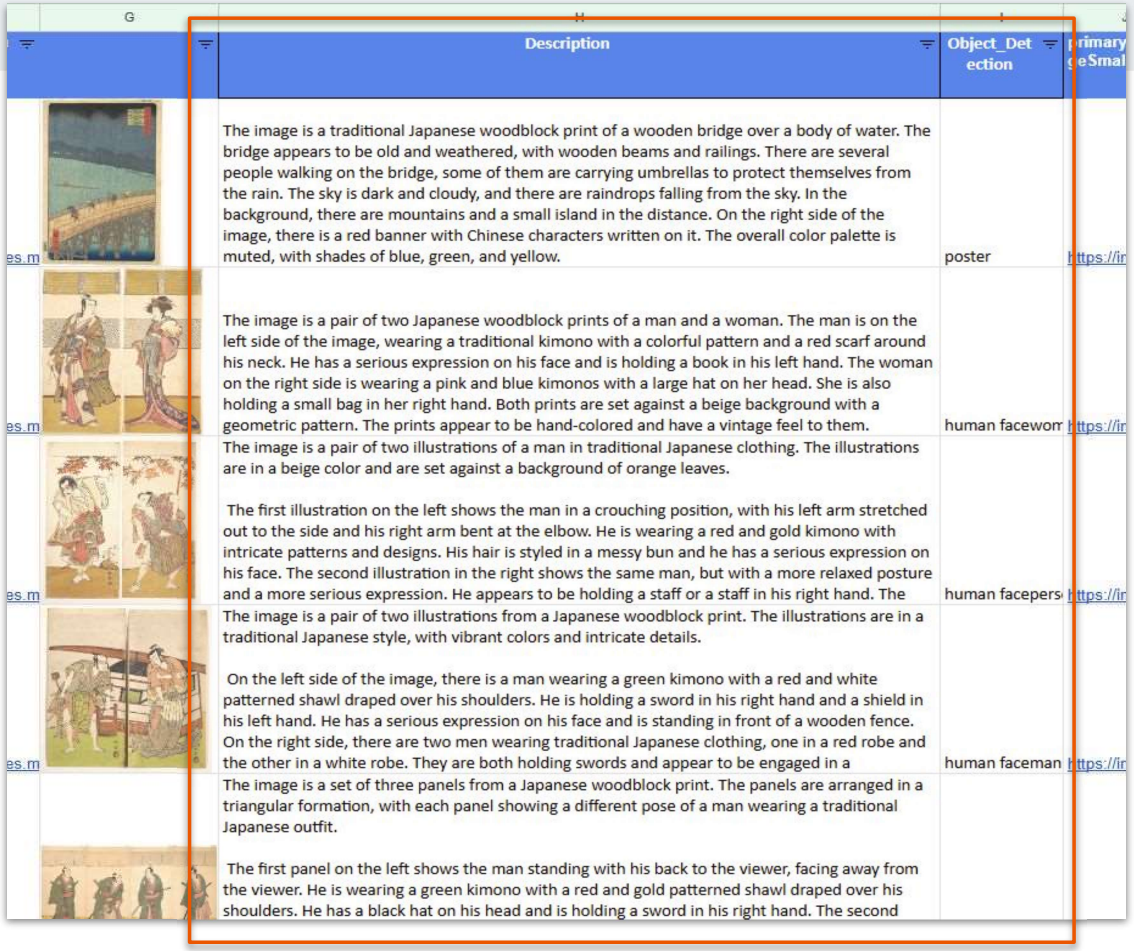
B. AI and Digital Collections

B. AI and Digital Collections

Testrun: 3000+ prints from the MET collection

App: Automated image description generation system with vision models

- identify and categorize landscape features within prints
- establish typologies and patterns across large collections
- verify algorithmic clustering of similar scenes

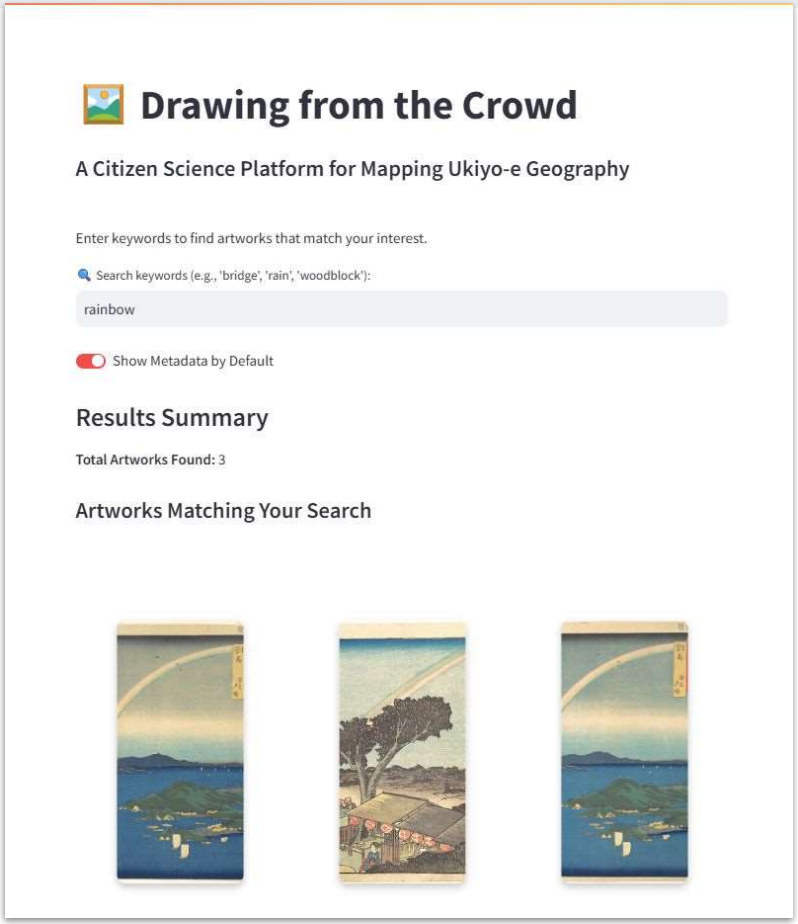


	Description	Object_Detection	primary image Small
	The image is a traditional Japanese woodblock print of a wooden bridge over a body of water. The bridge appears to be old and weathered, with wooden beams and railings. There are several people walking on the bridge, some of them are carrying umbrellas to protect themselves from the rain. The sky is dark and cloudy, and there are raindrops falling from the sky. In the background, there are mountains and a small island in the distance. On the right side of the image, there is a red banner with Chinese characters written on it. The overall color palette is muted, with shades of blue, green, and yellow.	poster	https://ir
	The image is a pair of two Japanese woodblock prints of a man and a woman. The man is on the left side of the image, wearing a traditional kimono with a colorful pattern and a red scarf around his neck. He has a serious expression on his face and is holding a book in his left hand. The woman on the right side is wearing a pink and blue kimonos with a large hat on her head. She is also holding a small bag in her right hand. Both prints are set against a beige background with a geometric pattern. The prints appear to be hand-colored and have a vintage feel to them.	human facewor	https://ir
	The image is a pair of two illustrations of a man in traditional Japanese clothing. The illustrations are in a beige color and are set against a background of orange leaves. The first illustration on the left shows the man in a crouching position, with his left arm stretched out to the side and his right arm bent at the elbow. He is wearing a red and gold kimono with intricate patterns and designs. His hair is styled in a messy bun and he has a serious expression on his face. The second illustration in the right shows the same man, but with a more relaxed posture and a more serious expression. He appears to be holding a staff or a staff in his right hand. The	human facepers	https://ir
	The image is a pair of two illustrations from a Japanese woodblock print. The illustrations are in a traditional Japanese style, with vibrant colors and intricate details. On the left side of the image, there is a man wearing a green kimono with a red and white patterned shawl draped over his shoulders. He is holding a sword in his right hand and a shield in his left hand. He has a serious expression on his face and is standing in front of a wooden fence. On the right side, there are two men wearing traditional Japanese clothing, one in a red robe and the other in a white robe. They are both holding swords and appear to be engaged in a	human faceman	https://ir
	The image is a set of three panels from a Japanese woodblock print. The panels are arranged in a triangular formation, with each panel showing a different pose of a man wearing a traditional Japanese outfit. The first panel on the left shows the man standing with his back to the viewer, facing away from the viewer. He is wearing a green kimono with a red and gold patterned shawl draped over his shoulders. He has a black hat on his head and is holding a sword in his right hand. The second		

Automatically generated image descriptions that we can filter for keywords to assess whether a print contains elements of landscape or not

B. “How do we recognize landscapes?”

- Human-computer collaboration
- Interrogating perception patterns and their Western, Japanese, universal nature



C. Platform Mockup

C. Platform Model

Project Webpage

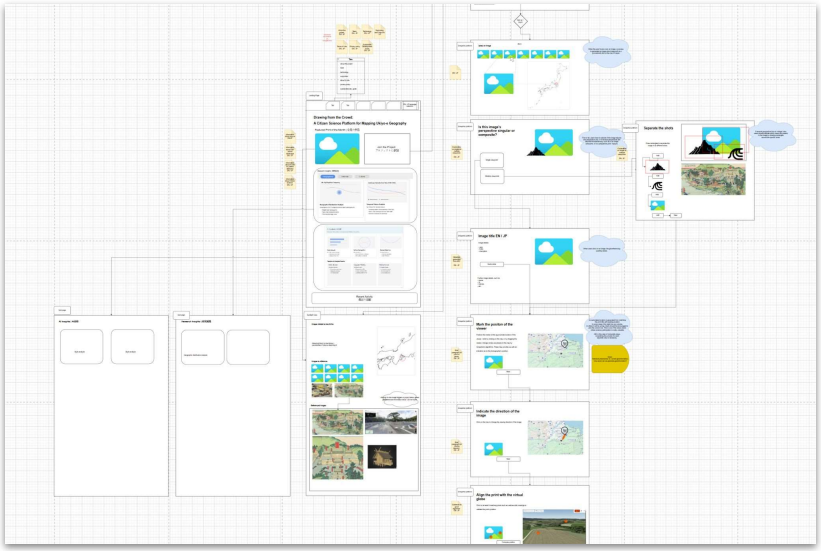
- project information
- images and image cluster information
- curated spotlight views
- integrated GIS data
- EN / JP

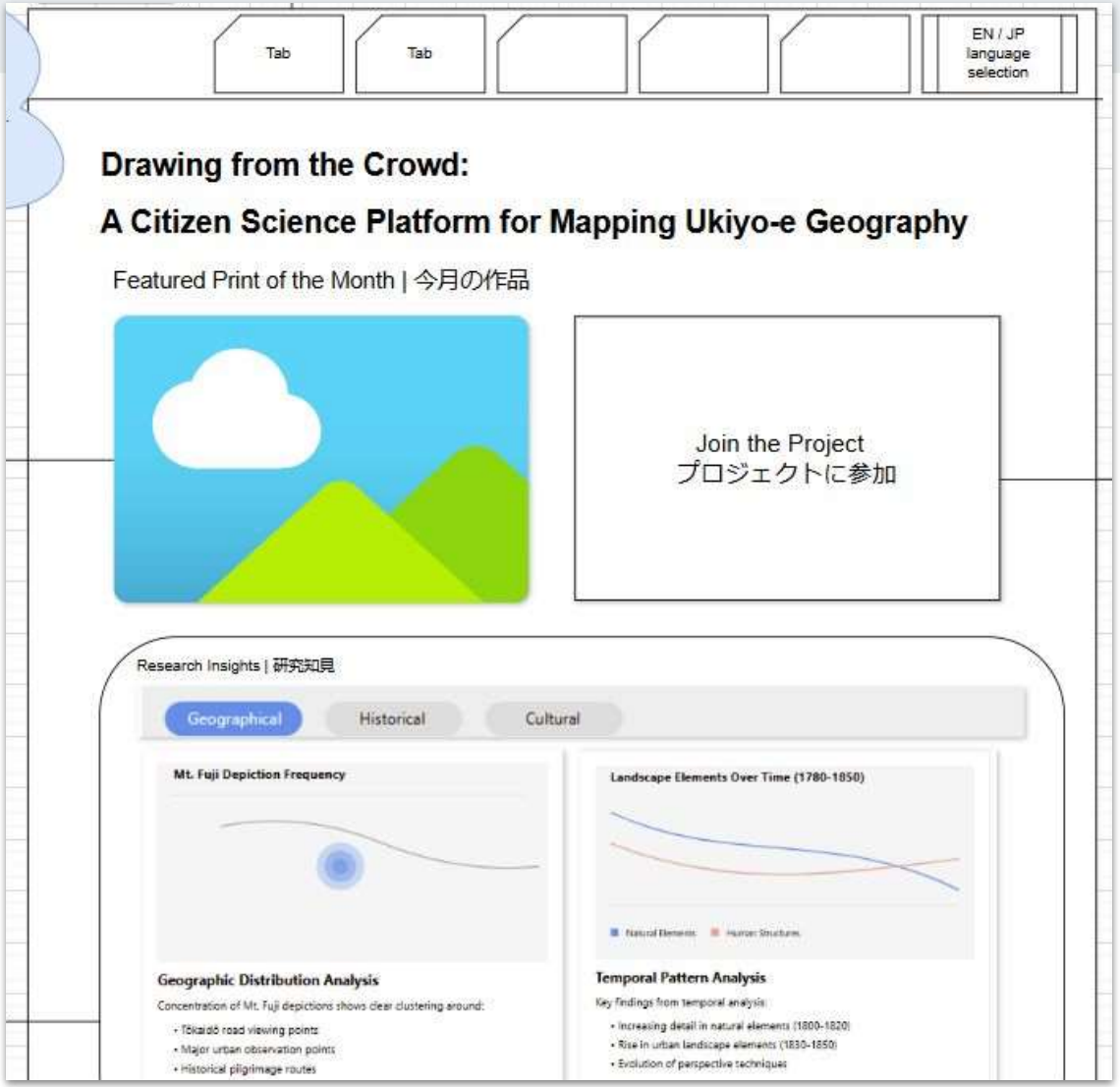
Data exchange

Contribution Workspace

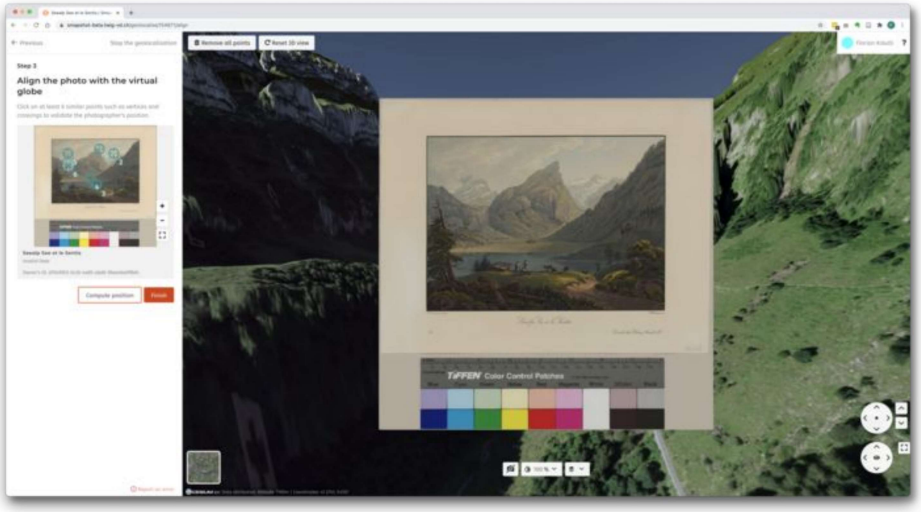
- geo-localisation workflow
- commenting workflow
- hosting of terrain models
- EN / JP

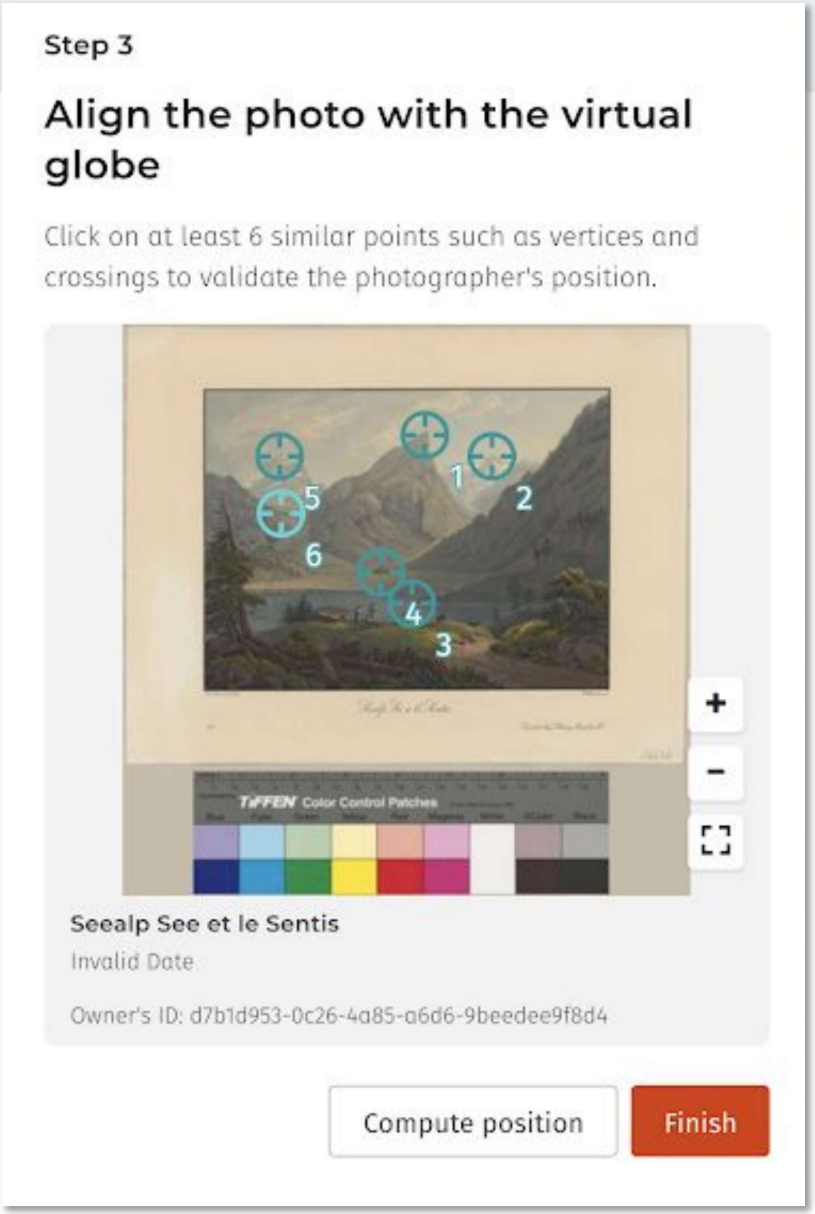
C. Project Webpage / Landing page (etc.)



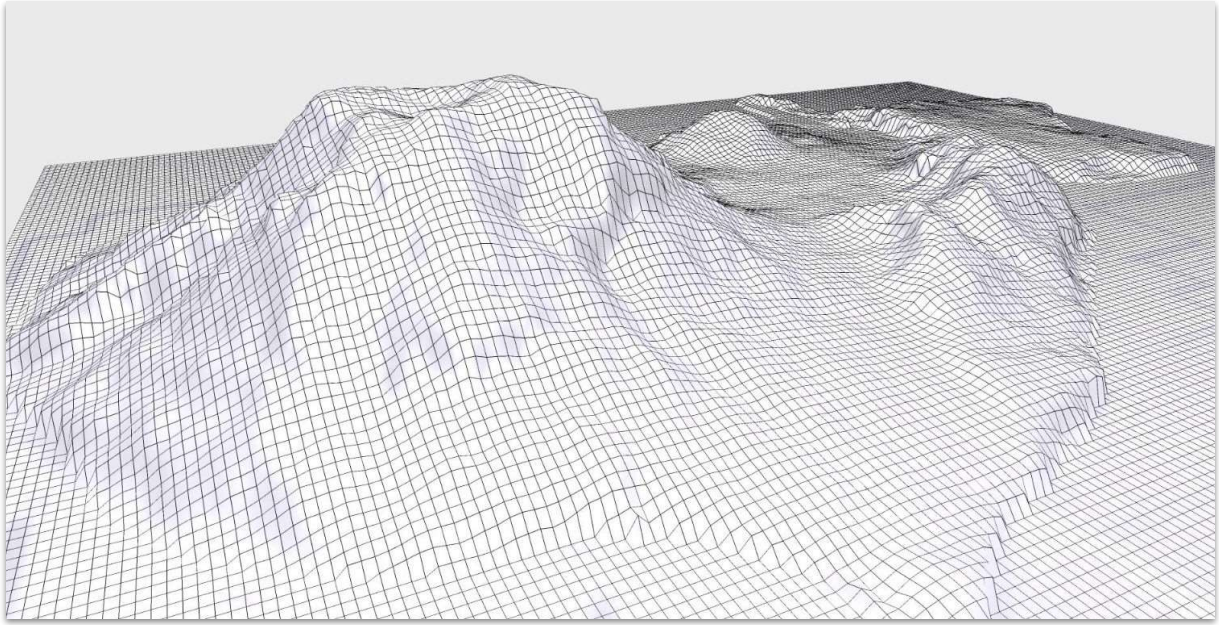


C. Contribution Workspace





C. Separate: Contribution Workspace



C. Project Webpage: Spotlight Views

- integrate georeferenced information on selected areas
- example: Ise shrine

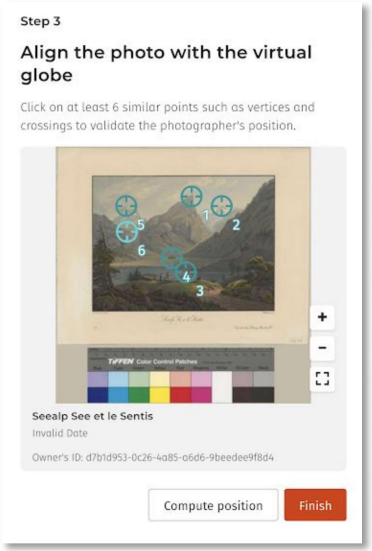
Invitation for Feedback

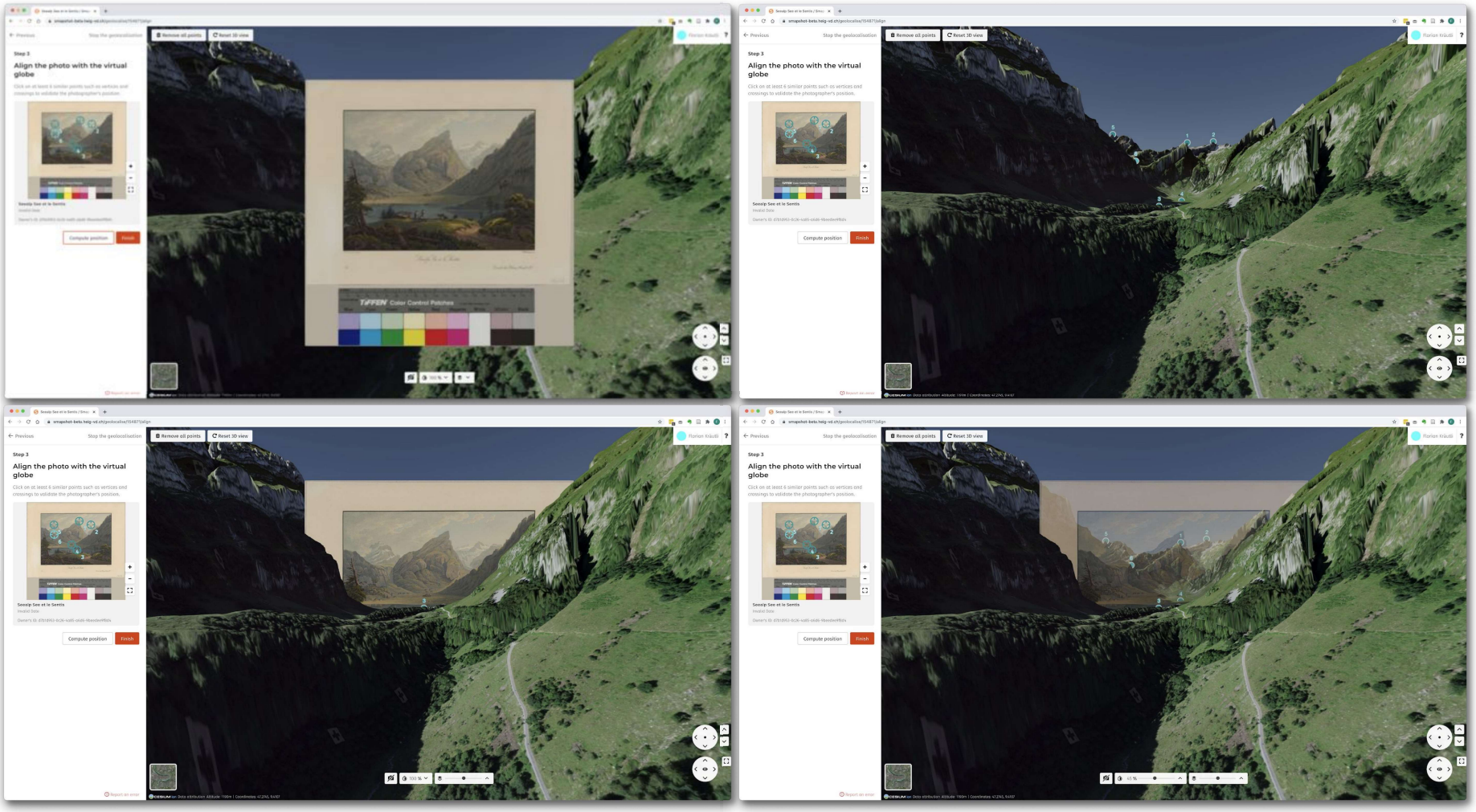
- AI-powered image analysis approach
- dual-language interface design (EN / JP)
- balance between technical geolocation tools and cultural interpretation
- ways to enhance community engagement

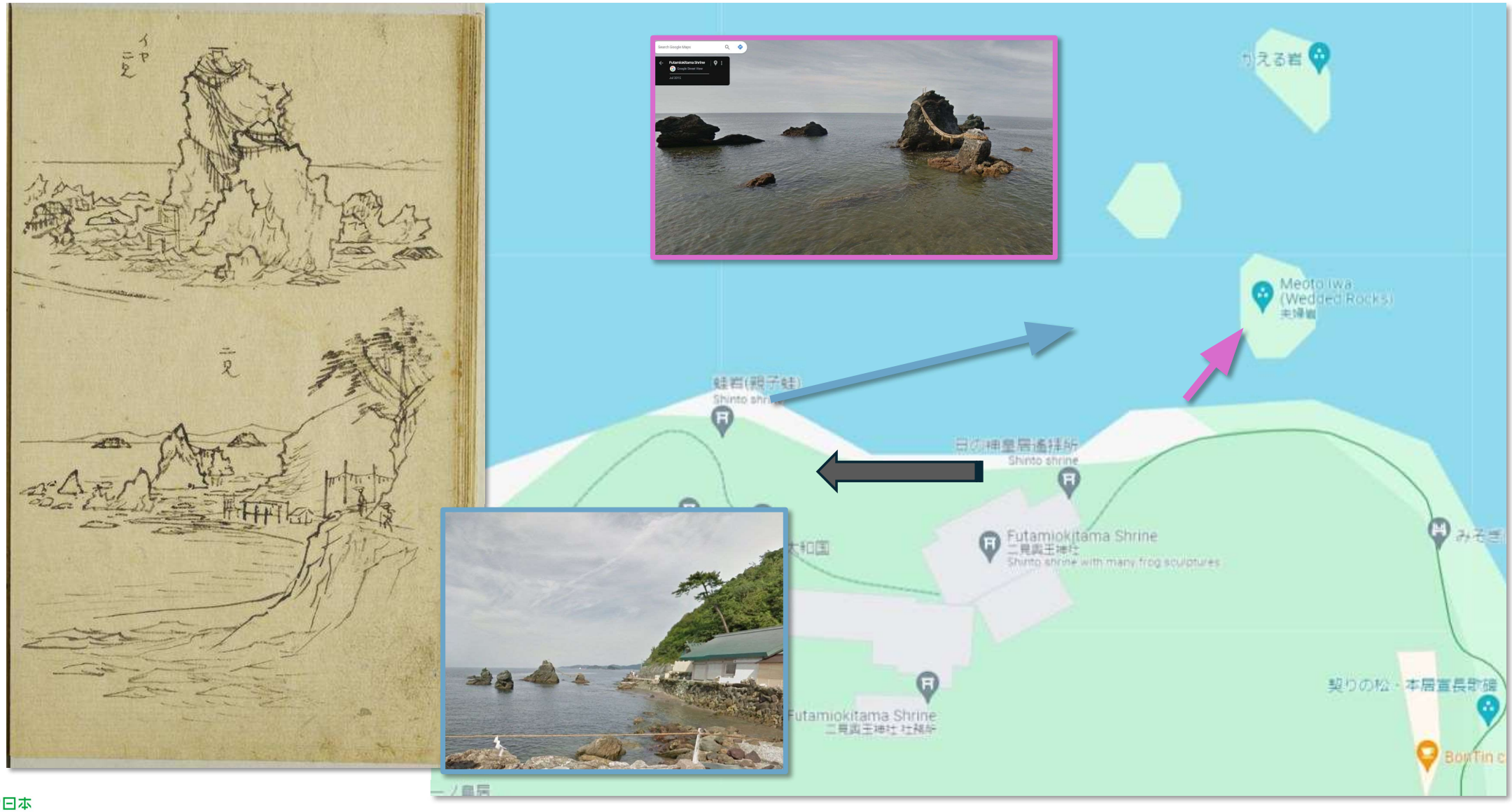
Thank you for your kind attention.

Spare slides for explanations

Smapshot / monoplotting






Meoto Iwa
(Wedded Rocks)
Futamiokitama Shrine
二見興玉神社
Shinto shrine with many frog sculptures
Futamiokitama Shrine
二見興玉神社 社務所
Shinto shrine