

IIIF Curation Platform: Recent Developments to Support Large Language Models and the Latest APIs



Asanobu KITAMOTO

ROIS-DS Center for Open Data in the Humanities (CODH)

National Institute of Informatics

<http://codh.rois.ac.jp/>

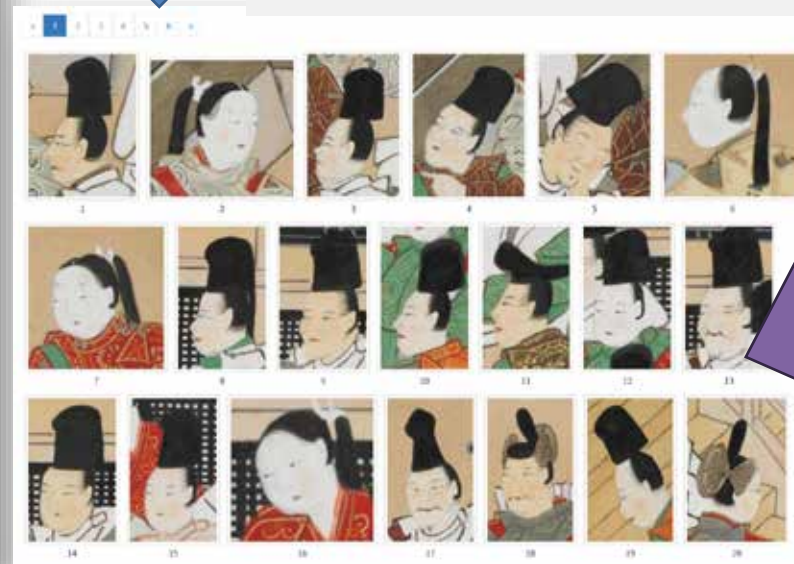
Co-authors: Jun Homma (FLX Style)

IIIF Curation Viewer (since 2016)

<http://codh.rois.ac.jp/software/iiif-curation-viewer/>



1. Draw a rectangle
2. Add to favorites



User-Driven Content Creation:
Create your collection from multiple manifests

Progress in 8 Years



<http://codh.rois.ac.jp/icp/>

1. 2017 IIIF Conference: **Extending IIIF to curation and timeline: case studies in cultural heritage, humanities, and natural sciences**
2. 2018 IIIF Conference: **IIIF Curation: the concept, its development, and its potential impact on search and discovery**
3. 2019 IIIF Conference: **IIIF Curation Platform: User-Driven Image Sharing with Machine Learning-Based Image Annotation**
4. IIIF Fall Working Meeting 2020: **IIIF Curation Platform: A user-centered platform for adding values to IIIF content**
5. 2021 IIIF Annual Meeting: **IIIF Curation Platform: Canvas-Level Linking Structure for User-Driven Content Creation**
6. IIIF Fall Working Meeting 2021: **Creating Image Annotations Using the IIIF Curation Platform for a Digital Humanities Project on the Omeka S**
7. IIIF Online Meeting 2024: **IIIF Curation Platform: Recent Developments to Support Large Language Models and the Latest APIs**

IIIF Curation Platform Software

1. IIIF Curation Viewer
2. IIIF Curation Viewer Embedded
3. IIIF Curation Finder
4. IIIF Curation Manager
5. IIIF Curation Editor
6. IIIF Curation Player
7. IIIF Curation Board
8. IIIF Tsukushi Viewer
9. KuroNet Text Editor

Today's Topics



Support Large Language Model (LLM)



Support IIIF Image / Presentation API 3

Support of Large Language Models - IIF Tsukushi Viewer

絵本江戸桜

4 / 16



AI Chat

Target of the chat

Entire book Page list Image region

You

Explain the attraction for tourists

AI (gpt-4o)

The text describes various attractions for tourists in Edo (now Tokyo), highlighting scenic landscapes, historical sites, and cultural experiences. Notably:

1. **日暮里**: Known for its high vantage point offering views of Mount Tsukuba and the surrounding area, including temples and scenic gardens. It's especially popular during the cherry blossom season.
2. **東叡山寛永寺**: A notable temple modeled after Mount Hiei (比叡山) known for its beautiful cherry blossoms and considered one of Edo's premier scenic locations.
3. **新古原**: Famous for its entertainment and vibrant nightlife centered around the courtesan district, offering a unique cultural experience.
4. **湯島天満宮**: A shrine dedicated to Sugawara no Michizane, known for its festivals in February and October, featuring traditional rituals.
5. **飛鳥山**: Renowned for its cherry blossoms and panoramic views extending to Mount Tsukuba and



Continue chat

Summarize

IIIF Image Viewer

Generative AI Chat



IIIF Tsukushi Viewer

<http://codh.rois.ac.jp/software/iiif-tsukushi-viewer/>

1. **Connect** the generative AI (Large Language Model / LLM) to the world of IIIF.
2. **Design** a **generative AI chat service** to assist in reading books.
3. **Offer** multiple choices of LLM, including **closed and open models**, to explore the best model for classical Japanese.
4. **Focus** on how to improve user experience and **sustainable scholarly service**, considering the high cost.

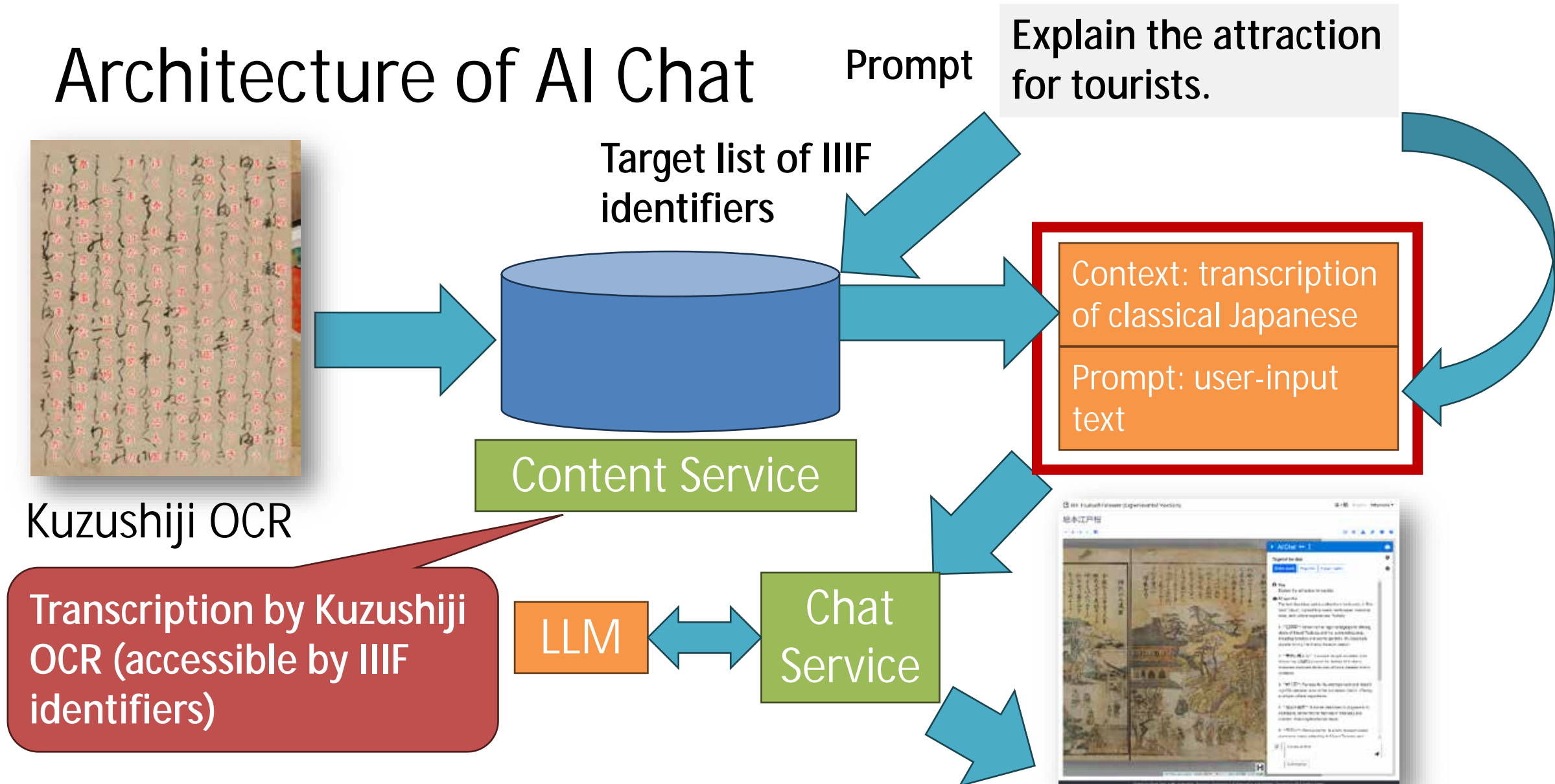
Generative AI Chat for Books

1. Define the prompt template as “Do X for Y” (select target Y and do action X).
2. Example prompts: “Summarize the whole book” or “Translate the page list.”
3. **Target**: The information unit of books is compared with the basic unit and identifiers of IIIF.
4. **Action**: Typical prompts (e.g. summarize) are included into the prompt library.

Information Unit and IIIF

Information Unit of Books	IIIF Unit and Identifiers
Entire book	Manifest (Manifest URI)
Page list	List of Canvas (Canvas ID)
Image region	A part of Canvas (Image Request URI)

Architecture of AI Chat



Tsukushi Content Service

1. **RESTful API service** for providing text by **Manifest URI** and **Canvas ID**.
2. **Book metadata** is provided when only Manifest URI is specified.
3. **A text embedding model** (OpenAI text-embedding-3-small) for vector search (RAG: Retrieval Augmented Generation).
4. **PostgreSQL and pgvector** for efficient hybrid SQL and vector search.

Tsukushi Chat Service

1. **JSON-RPC service** for providing multiple chat methods from a single endpoint.
2. **Method**: the name combines the target and the action, such as "book:chat" and "text:summarize."
3. **Parameter**: each method has its own parameters, such as the LLM model, its parameters, and other parameters.
4. **ID**: the same ID means a series of single chats. Change the ID to refresh the context.

AI Chat Setting

1. Offer a variety of choices for **closed and open models**.
2. Show **a guide (3 stars)** to choose a good model.
3. **Set a quota for paid APIs** based on the daily limit.
4. **How to make this service sustainable?**

AI Chat Setting

Model setting

Filter by usage pattern

Prioritize performance Prioritize number of use All

Filter by language

Multilingual Japanese-centric English-centric All

claude-3-5-sonnet☆☆☆ gpt-4o☆☆☆ gemma2☆☆

qwen2☆☆ elyza☆☆ phi-3☆☆ llm-jp☆☆

mistral☆☆ llama3☆☆ aya☆☆

Has Quota

Use the paid APIs provided by OpenAI. There is a limit of a maximum of 10 uses per 24 hours for all paid APIs combined. [[Detailed Information](#)]

Temperature 1.0

Temperature (0.0-1.0) controls the randomness. A larger value returns more diverse answer. This setting is preserved in a browser.

Common setting

Number of reference pages 5

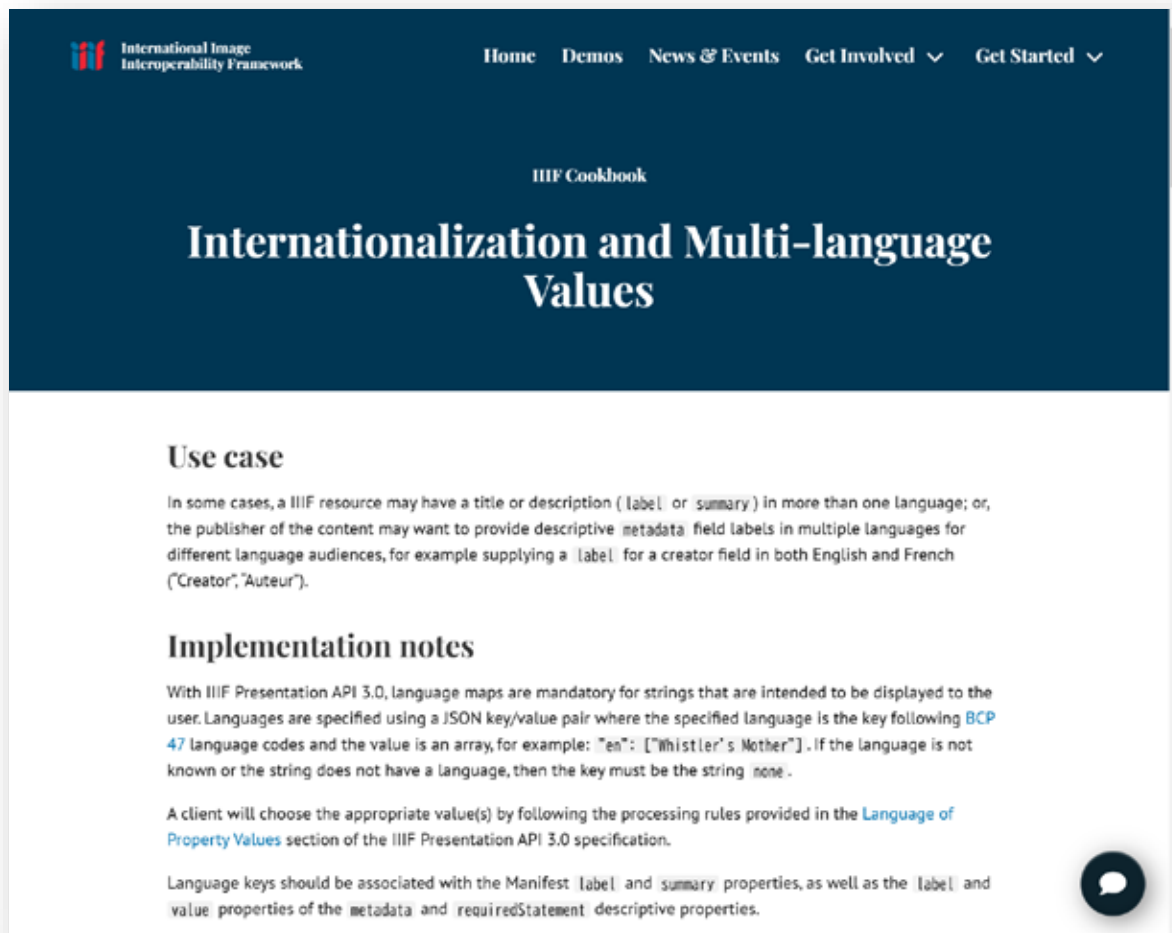
IIIF Image / Presentation API 3

IIIF Image / Presentation API 3

1. The IIIF Curation Platform was first released in **November 2016 at the age of IIIF 2.0.**
2. The ICP software heavily depends on the structure of IIIF 2.0. *We don't want to redesign everything from scratch!*
3. **Our solution:** **compatibility layer** to convert 3.0 to 2.0 internally.
4. **IIIF Curation Platform 2.0** was finally released on November 12, 2024!

IIIF Cookbook for Testing 3.0 Support

<http://codh.rois.ac.jp/icp/prezi-3/>



The screenshot shows the IIIF Cookbook website. The header includes the IIIF logo and navigation links: Home, Demos, News & Events, Get Involved, and Get Started. The main heading is "IIIF Cookbook" followed by "Internationalization and Multi-language Values".

Use case

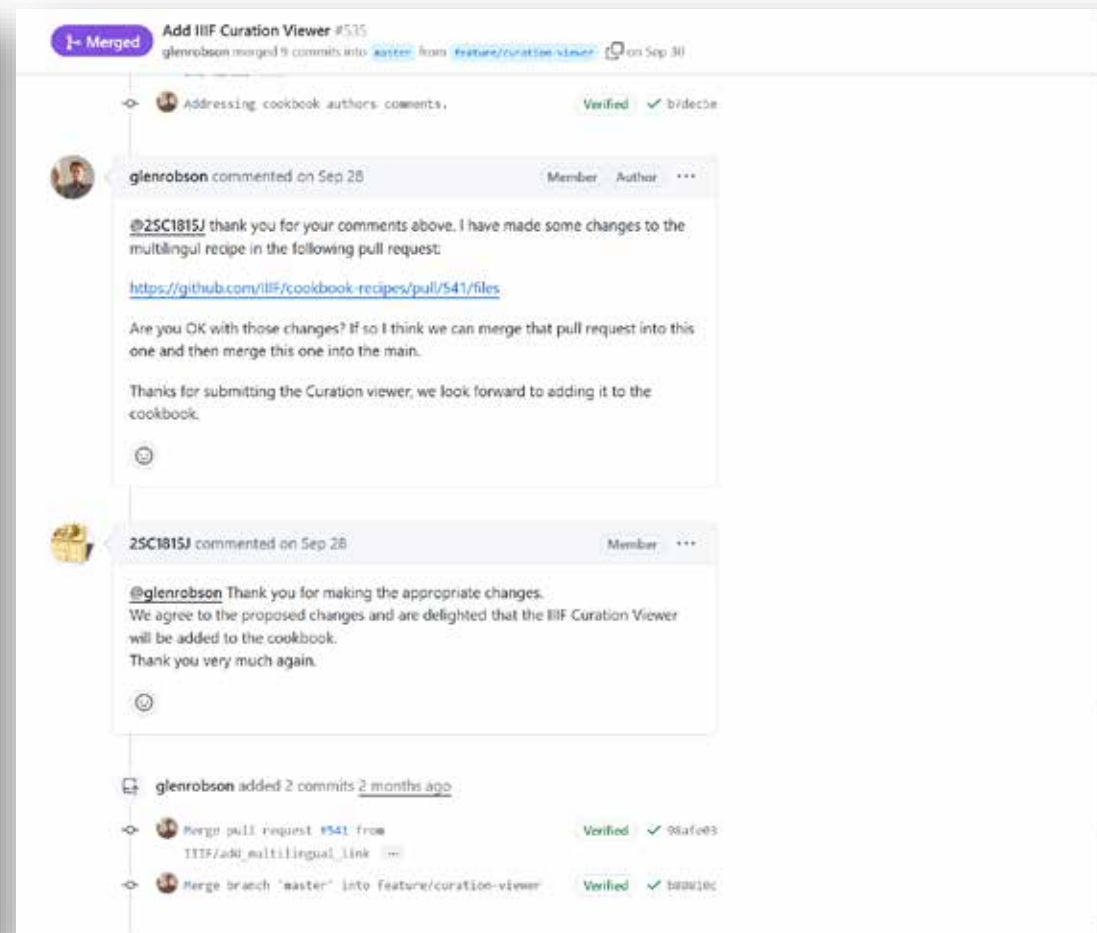
In some cases, a IIIF resource may have a title or description (`label` or `summary`) in more than one language; or, the publisher of the content may want to provide descriptive `metadata` field labels in multiple languages for different language audiences, for example supplying a `label` for a creator field in both English and French ("Creator", "Auteur").

Implementation notes

With IIIF Presentation API 3.0, language maps are mandatory for strings that are intended to be displayed to the user. Languages are specified using a JSON key/value pair where the specified language is the key following [BCP 47](#) language codes and the value is an array, for example: `"en": ["Whistler's Mother"]`. If the language is not known or the string does not have a language, then the key must be the string `none`.

A client will choose the appropriate value(s) by following the processing rules provided in the [Language of Property Values](#) section of the IIIF Presentation API 3.0 specification.

Language keys should be associated with the Manifest `label` and `summary` properties, as well as the `label` and `value` properties of the `metadata` and `requiredStatement` descriptive properties.



The screenshot shows a GitHub pull request discussion. The pull request is titled "Add IIIF Curation Viewer #541" and is merged. The discussion includes comments from glenrobson and 25C1815J.

glenrobson commented on Sep 28

@25C1815J thank you for your comments above. I have made some changes to the multilingual recipe in the following pull request:

<https://github.com/IIIF/cookbook-recipes/pull/541/files>

Are you OK with those changes? If so I think we can merge that pull request into this one and then merge this one into the main.

Thanks for submitting the Curation viewer, we look forward to adding it to the cookbook.

25C1815J commented on Sep 28

@glenrobson Thank you for making the appropriate changes. We agree to the proposed changes and are delighted that the IIIF Curation Viewer will be added to the cookbook. Thank you very much again.

glenrobson added 2 commits 2 months ago

- Merge pull request #541 from IIIF/add_multilingual_link
- Merge branch 'master' into feature/curation-viewer



III F Curation Platform

<http://codh.rois.ac.jp/icp/>
Open Source (MIT License)

Contact

Asanobu Kitamoto
kitamoto@nii.ac.jp