



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 Final Presentation Webinar

Dr. Stephanie Santschi, University of Zurich (SUI)
Dr. Himanshu Panday, Dignity in Difference (IN)
Hirohito Tsuji 辻 博仁, University of East Anglia (UK)
Dr. Drew Richardson, UC Santa Cruz (US)

Monday, March 10, 2025, 20:00–21:30 (JST)

Introduction and Recap

StS

The Research Team

Dr. Stephanie Santschi (Principal Investigator)
University of Zurich, Switzerland
Japanese Art History and Digital Humanities

Dr. Himanshu Panday
DignityInDifference.org, India
AI and computer vision implementation

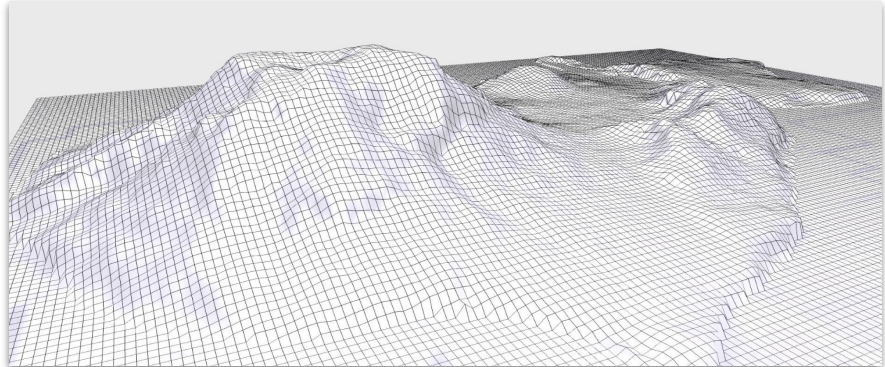
Dr. Drew Richardson
University of California Santa Cruz, US
Historical Japanese literature and print culture

Hirohito Tsuji
University of East Anglia, UK
Data collection and Japanese translations



The Goals

- Generating evidence-based insights through georeferencing
- Identifying the print illustrator's point of view
- Analyzing relationship between topographical and artistic representation
- Understanding historical visualization practices



The Promise

Combining digital humanities with art history to understand historical space visualization

Supported by:



Universität
Zürich ^{UZH}



The Challenges

- Team Interdisciplinarity → knowledge building requiring resources
- Rapid speed of AI development → learning constantly
- World events (wildfires, electricity outages, politics) → navigating direct and indirect impact)

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→ Given these circumstances, having the Nippon Foundation's support was even more important. Especially in an increasingly fraught world, we need to work together, across boundaries, and coming from different disciplines, to effect a positive change in the world.

The Achievements

- Feature recognition tool (AI) → in the future, this will help us detect landscapes from large collections of prints
- Beta georeferencing platform → proof of concept, the beta version can be used in follow-up grant applications and to refine its functionalities
- Project webpage → this is our project's business card
- Citizen Science Webinar and other presentations → you helped to refine our project by giving direct feedback on it

Methodology

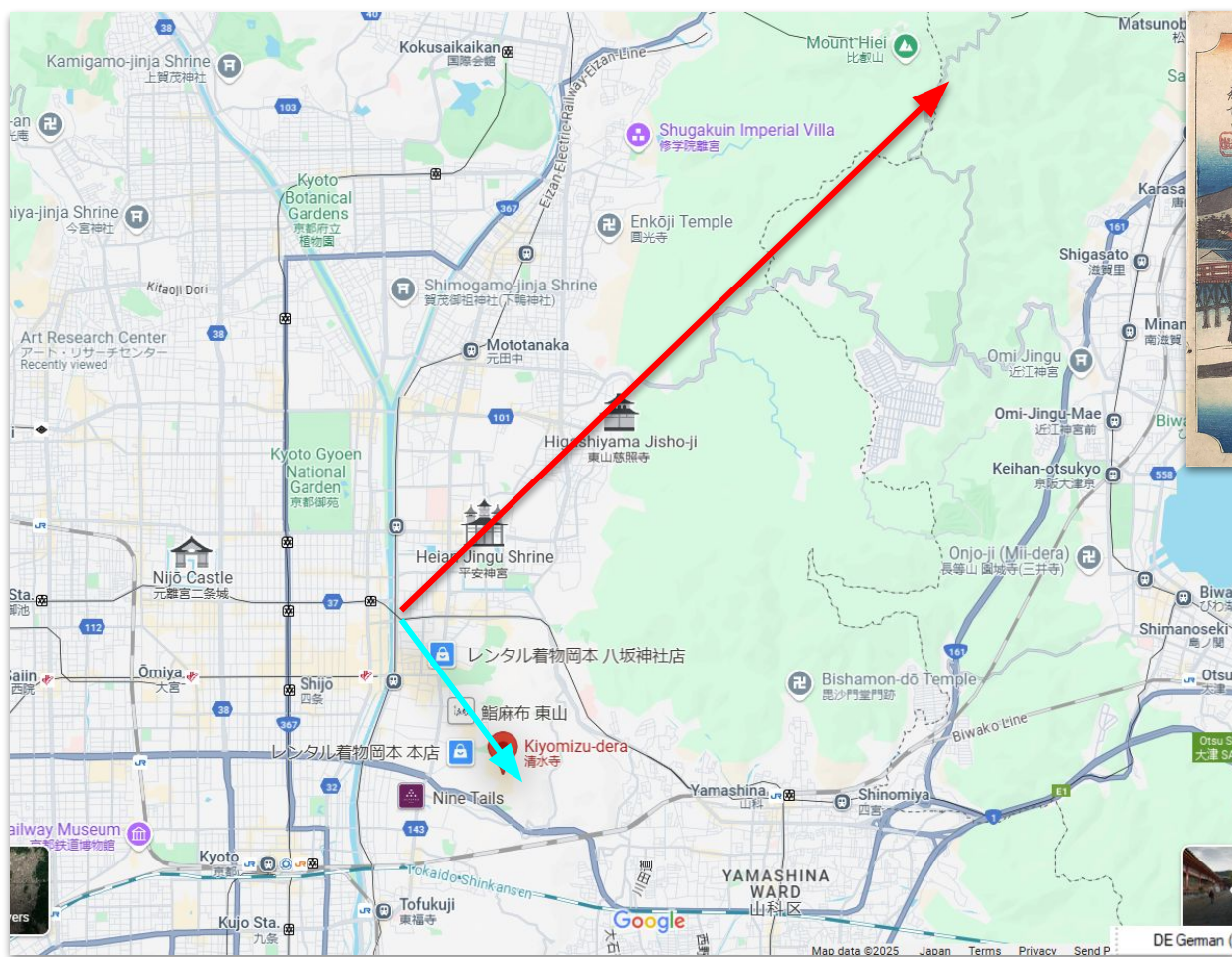
StS

The Research Methodologies: Macro- and Micro-Views

- Close Viewing of individual objects by individual participants (subjective)
- Distant Viewing (adapted from Franco Moretti's Distant Reading): pattern detection (structural)

→ **combining macro- and micro-perspectives**





Technical Developments

StS/HP

The Feature Recognition Tool

- Searching for object features in the MET dataset
- Image recognition AI



Drawing from the Crowd

A Citizen Science Platform for Mapping Ukiyo-e Geography

Enter keywords to find artworks that match your interest.

Search keywords (e.g., 'bridge', 'rain', 'woodblock'):

rainbow

☒ Show Metadata by Default

Results Summary

Total Artworks Found: 3

Artworks Matching Your Search



The Platform Prototype

- Print georeferencing workflow by Snapshot
- 3D terrain model integration



Beta
version

[← Previous](#) [Stop the geolocalisation](#)


Remove all points

Reset 3D view

Stephanie Sants... ?

Align the image with the virtual globe

Click on at least 6 matching points such as vertices and crossings to validate the photograph's position.



+

-

[[]]

Lake Suwa in Shinano Province (Shinshu Suwako), from the series Thirty-six Views of Mount Fuji (Fugaku sanjurokkei)
1820 - 1842
Owner's ID: JP2564

Compute position


Finish

Report an error

Remove all points

Reset 3D view

Stephanie Sants... ?



100 %

DE German (Switzerland)

Cesium ion

Data attribution

Altitude: 1816.0905m

Coordinates: 36.1163, 137.9951

Azimuth: 133.3648



<https://smapshot-beta.heig-vd.ch/contribute/299096>

DE German (Switzerland)

Japan

Lake Suwa in Shinano Province (Shinshu Suwako), from the series Thirty-six Views of Mount Fuji (Fugaku sanjurokkei)

1820 - 1842

Add a caption

Download Share

Geolocalise

Image Details Observations



48 photos ^



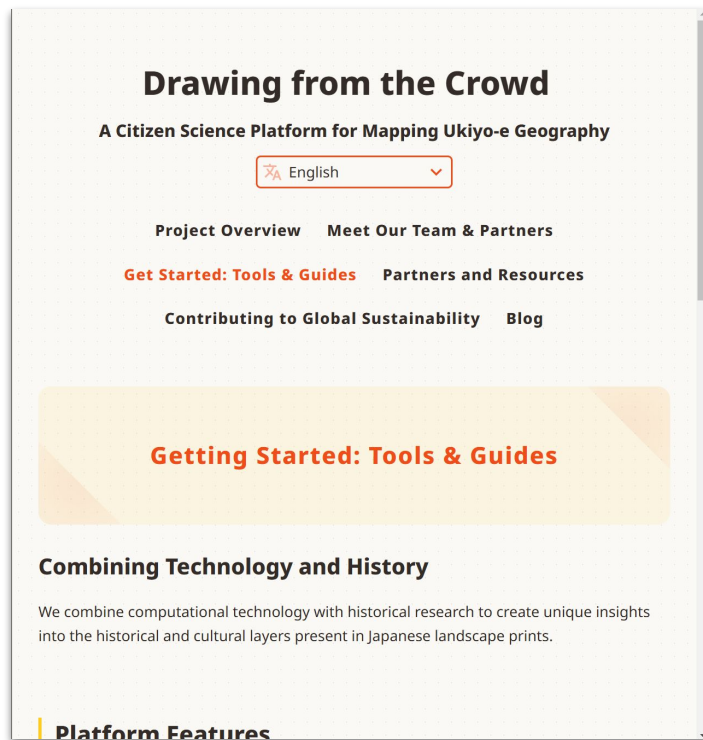
DE German (Switzerland)

The Project Website and Research Collaborative

- "The PrintLab: A Print and Code Collective"
- Project Website



Under
construction



Data and Translation

StS, HT

Data and Translation

- Obtaining data
- Writing and translating texts

Obtaining Data

- Test data: 3000+ *ukiyo-e* images and metadata from the MET
- Terrain model data from the Japanese Geospatial Authority
- Registration with Ritsumeikan University (ARC-iJAC), access to 200k prints

Examples of resources for the project

- Official English translations of Japanese laws from the Ministry of Justice
- Historical place name data set from the ROIS-DS, Center for Open Data in the Humanities
- Original texts of *waka* poems (research on the *utamakura* 歌枕)

Writing and Translating Texts

- Bilingual texts about project and citizen science process:
- All pages in the platform have been made English-Japanese bilingual
- Privacy policy and user terms have been appropriately indicated based on the differences between EU and Japanese laws
- Final proofreading by Hirohito, a native Japanese speaker (ongoing)

Conclusion and Outlook

StS

The Project Presentations

- Feb. 28, 2025. "New Perspectives: A Look at the Processes that Shaped *Ukiyo-e* Landscapes and A Career in Japanese Art History," *Nippon Foundation Fellows Workshop*, Stanford Inter-University Center, Yokohama.
- Feb. 21, 2025. Project report: "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," *Ritsumeikan ARC: FY2024 Annual Report Meeting* 立命館ARC「2024年度成果報告会」, Ritsumeikan University Art Research Center, Kyoto [zoom].
- Jan. 21, 2025.「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」, *9th Digital Humanities Research Meeting "Ukiyo-e, Citizen Science, and DH* 第9回 DH研究会「浮世絵、市民科学、DH」Hibiya Library and Museum Seminar Room 日比谷図書文化館 セミナールーム Tokyo.
- Jan. 20, 2025. "Citizen Science Webinar on Localizing Japanese *Ukiyo-e* Landscapes," *The Nippon Foundation Scholars Association*, The Nippon Foundation, Tokyo.
- July 12, 2024. "Viewed at a distance: geography in *ukiyo-e* prints", *Charting the European D-SEA: Digital Scholarship in East Asian Studies Conference*, Max Planck / Staatsbibliothek Berlin.

The Project Outcome and Future Vision

Achieved objectives:

- Scientific embedding: University of Zurich, upcoming conferences
- Functional prototype for Japanese print georeferencing
- Engagement of citizen scientists through webinar
- Establishment of "The PrintLab: A Print and Code Collective"

Next steps:

- Securing implementation funding (min. 20k USD required)
- Expansion to UZH teaching program
- Further research on visual culture and historical viewing practice
- Publications and Presentations

The Upcoming Presentations

[Upcoming, confirmed]:

- **Digital Humanities**

July 14–18, 2025, “Reconstructing Japan’s Scenic Past from Prints: Combining Citizen Science and AI-Methods for Authenticating Direct Observation in Ukiyo-e Landscapes, *Digital Humanities 2025*, Lisbon.

- **Japanese Studies**

Aug. 20–22, 2025. “Drawing from the Crowd’: Eine Citizen-Science-Plattform zur geographischen Verortung von Ukiyo-e,” *Japanologentag 2025, Sektion Informations- und Ressourcenwissenschaften*, Goethe-Universität Frankfurt.

- **Early modern Japanese Literature**

Sept. 18–20, 2025. “Moving Mountains: Analyzing Spatial Narratives in Ukiyo-e through Citizen Science,” *International Symposium of the Nihon kinsei bungaku kai 日本近世文学会 Early Modern Graphic Narratives (kusazōshi): Making the Most of Digital Data*, Faculty of Asian and Middle Eastern Studies The University of Cambridge.

The Funding Applications

To submit (March 15, 2025), result expected in June 2025:

- Graduate Research Center **Career Grant**, University of Zurich, ca. 17k USD

Submitted (March 2, 2025), result expected in May 2025:

- **Citizen Science Seed Grant**, University of Zurich, ca. 44k USD

Submitted (Jan. 5, 2025), **unsuccessful**:

- **Marco Castro Cosio Fellowship**, 10k USD

Submitted (Aug. 30, 2024), **unsuccessful**:

- **Google Artists + Machine Intelligence (AMI) Research Awards**, 20k USD

The Final Word

Drew: “It has been very exciting to see this project evolve over the past six months. I want to thank the Nippon Foundation for providing the opportunity to develop seed projects such as this one, and our excellent team – Stephanie, Himanshu, and Hirohito – whose organization, vision, and creativity made this project possible.”

Himanshu: “There is so much that became possible of our curiosities and knowledge through this project. Thanks to Nippon Foundation for provided us a platform to co-create through NSIC. I am grateful that I got to meet and work with such talented alumni of Nippon Foundation programs. Looking forward to the next leaps together!”

Hirohito:「サンチ・ステファニー博士を始めとする素晴らしいプロジェクトメンバーに加えて頂いたことは身に余る光栄でした。多大なご支援を賜りました日本財団に心より御礼申し上げます。益々のプロジェクト進展に向け、微力ながら引き続き精進致してゆく所存です。Thank you very much!」

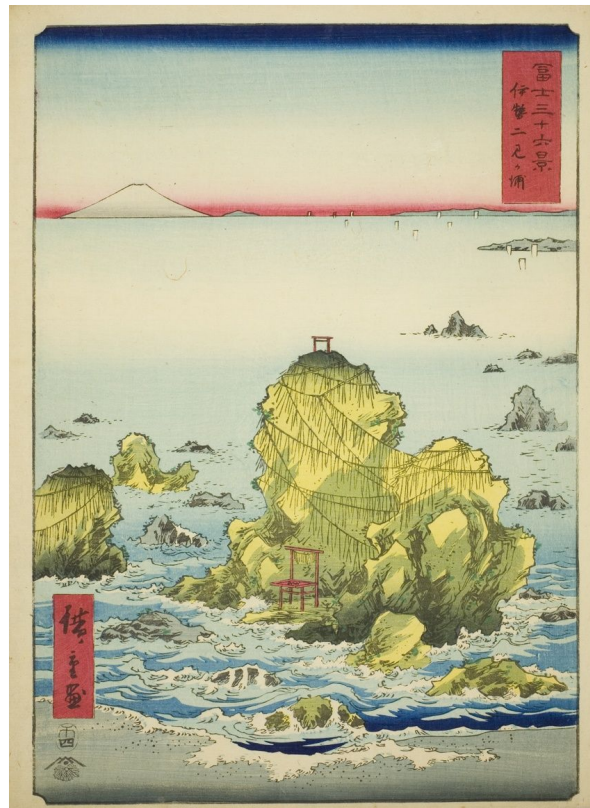
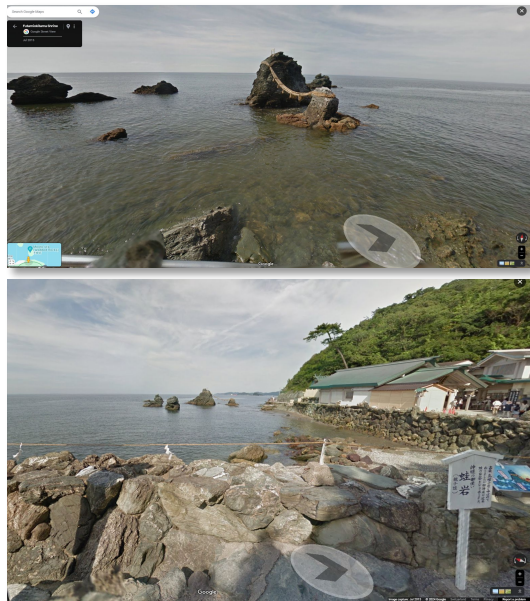
Stephanie: “Thank you to the Nippon Foundation, and thank you to the colleagues! Together, we have arrived at something stronger and bigger than I could have ever dreamed. I’ll do my best to keep it going, with the goal of communicating Japanese arts to a wide public!”

Thank you for your kind attention.
ご静聴ありがとうございました



Spare slides in following, if needed for Q+A - please
exclude from sharing

Case Study: Hiroshige



左: Google マップ ストリートビュー スクリーンショット, 令和6年
中央: 歌川廣重 画帳 (弘化2-嘉永3) 大英博物館蔵
右: 歌川廣重「富士三十六景」より「伊勢二見か浦」, 安政5年



Mark the position of the photographer

Position the marker at the approximate location of the shot by clicking on the map or by dragging the marker. Orange circles are placed on the map by Smapshot's algorithms. These may provide you with an indication as to the photographer's position



Lake Suwa in Shinano Province (Shinshu Suwako), from the series Thirty-six Views of Mount Fuji (Fugaku sanjurokkei)

1820 - 1842

Owner's ID: JP2564

The position of the marker is:
approximate ▼

Next



Indicate the direction of the photograph

Click on the map to change the direction of the photograph.



Lake Suwa in Shinano Province (Shinshu Suwako), from the series Thirty-six Views of Mount Fuji (Fugaku sanjurokkei)
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The position of the marker is:
approximate ▾

Next

Report an error



Align the image with the virtual globe

Click on at least 6 matching points such as vertices and crossings to validate the photograph's position.



Lake Suwa in Shinano Province (Shinshu Suwako), from the series Thirty-six Views of Mount Fuji (Fugaku sanjurokkei)
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Report an error



画像をバーチャル地球儀に合わせる

Align the image with the virtual globe

Click on at least 6 matching points such as vertices and crossings to validate the photograph's position.



Lake Suwa in Shinano Province (Shinshu Suwako), from the series Thirty-six Views of Mount Fuji (Fugaku sanjurokkei)
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Report an error



例:
富士山をマーク

Data Analysis Challenges データ分析の課題

- Historical location changes and topographical shifts
- Place name evolution
- Monoplotting technique adaptation
- Artistic decision documentation
- Solutions:
 - Wikidata metadata enrichment
 - Specialized AI training for *ukiyo-e* conventions
 - Flexible interpretation schemas
 - Multi-viewpoint analysis system

- 歴史的地形の変遷と場所の変化
- 地名の変遷
- 「モノプロットイング」技術の浮世絵への応用
- 芸術的表現の選択の記録
- 解決策:
 - Wikidataによるメタデータ拡充
 - 浮世絵の表現様式に特化したAI学習
 - 複数の解釈を許容するスキーマ
 - 多視点分析システム



葛飾北齋 (宝暦10-嘉永2), 「富嶽三十六景 甲州三坂水面」天保元-3年頃, 東京富士美術館蔵

Research Potential

- Systematic measurement of viewing angles
- Multiple perspective documentation
- Artistic choice database
- Pattern analysis across artists
- Temporal change tracking
- Regional variation identification

研究の可能性

- 視角の体系的測定
- 多視点の記録
- 芸術的選択のデータベース化
- 絵師間のパターン分析
- 時間的変化の追跡
- 地域的変異の特定

Conclusion

- Hybrid methodology development
- Balance of computational and human expertise
- Integration of quantitative and qualitative methods
- Public engagement enhancement
- Digital tool complementation of traditional scholarship

結論

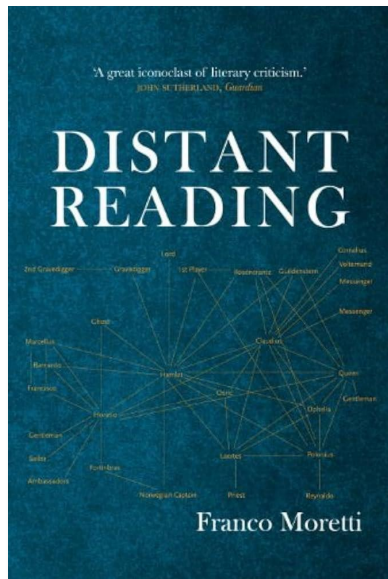
- ハイブリッド方法論の開発
- 計算的手法と人間の専門知識の調和
- 定量的手法と定性的手法の統合
- 市民参加の促進
- 伝統的な学術研究とデジタルツールの補完

Citizen Science Approach

- documentation of collaborative viewing processes
- Collection of subjective, qualitative viewer responses
- Comparison to existing citizen science projects:
 - OCR projects such as *kuzushiji* character recognition → result verification by users
 - Health and nature projects such as radiation measurement or insect identification → quantitative data collection
 - few projects integrating viewers directly in qualitative research process

Goal: Building of a collaborative research environment

Method 2: Distant Viewing



Franco Moretti: *Distant Reading*.
London: Verso, 2013.

□ “Distant **viewing**”:

Instead of studying individual prints one by one ("close viewing"), we use computational methods to analyze patterns across thousands of prints simultaneously

Computational analysis

- Pattern detection (image clustering)
- Computer vision (masking, feature extraction)
- Geospatial analysis (mapping, data visualization)