


【Grant-in-Aid for Transformative Research Areas (A)】

Establishing the Digital History

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Purpose and Background of the Research

● Overview of the Research

The application of information technology to various issues in the humanities is known as *Digital Humanities* (DH). This research focuses specifically on history within the field of DH, aiming to systematize both its theory and practice. By actively utilizing cutting-edge informatics techniques—including AI—and robust data infrastructures, the project seeks to transform the traditional structure of historical knowledge.

This project is guided by two central pillars: the **openness** and the **advancement** of historical knowledge through the use of computers.

Under the theme of **openness**, the project leverages digital technologies to build interdisciplinary and participatory research environments that include collaboration with adjacent fields and the general public. It aims to shift historical research away from its conventional, individual-centered model toward a team-based, cross-disciplinary approach. Through the accumulation, publication, and visualization of digital data, as well as the introduction of crowdsourcing methods, the project fosters a foundation for shared and circulating knowledge.

As for the **advancement** of historical research, the project explores new methodologies that externalize aspects of human interpretation and analysis of historical materials using information-processing technologies. Techniques such as natural language processing, machine learning, and knowledge generation are employed to automate tasks like transcription of handwritten historical documents and the extraction of named entities from texts. These efforts aim to build an analytical environment where human and machine collaborate effectively.

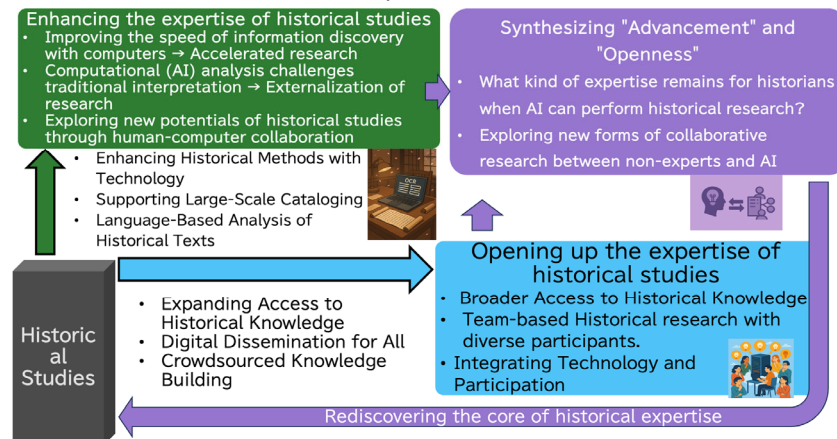


Figure 1. Conceptual Overview of the Project

● Exploring a New Form of Historical Studies Through Expertise and Team-Based Research

This project aims to integrate the "openness" and "advancement" of historical research into a unified theoretical framework. It examines the essence of historical scholarship while fostering collaboration between historians, information scientists, and non-experts at the local level. The goal is to establish a system where expert analysis and public participation can coexist, enabling shared access to historical knowledge and sources. We define this inclusive, cyclical structure—where historians engage continuously with stakeholders while reflecting on the core of their discipline—as "Historian in the Loop", a model for rethinking historical research in the digital age.

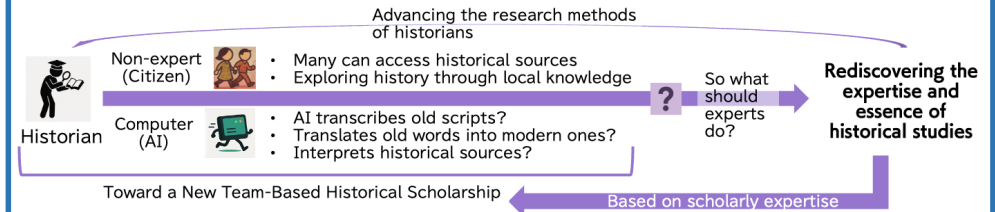


Figure 2. Historian in the loop

Expected Research Achievements

● Achieving research goals through multi-team collaboration

This project is organized into three core teams: **A: Openness of historical knowledge**, **B: Advancement of historical research**, and **C: Theoretical integration**.

A1: Core Catalog Development Team

Develops a catalog system for historical materials accessible to both experts and non-experts, aiming to build a metadata framework that reflects the essence of the sources.

A2: Historical Knowledge Structuring Team

Organizes complex knowledge in historical documents into a usable knowledge base, focusing on provenance, movement, and structural changes to support deeper understanding.

A3: Community Collaboration Team

Implements the "openness" concept through collaboration with local communities. Conducts joint research in multiple regions, adapting to the specific historical contexts of each locality.

B1: Computational Historical Analysis Team

Uses AI and OCR to analyze historical texts and images, focusing on Meiji Era materials to enhance reading efficiency and support cataloging, while comparing machine and human interpretation.

B2: Historical Knowledge Base Construction Team

Builds knowledge dictionaries for historical data by systematically structuring information such as people, periods, and events, forming a foundational layer for computational analysis.

B3: Advanced Text Encoding Team

Prepares structured historical texts using international standards (e.g., TEI) to provide reliable data, tagging structures and interpretations linked to dictionary information.

C: Theoretical Integration Team

Integrates insights from information science and history, focusing on the openness and advancement of historical knowledge, to rethink expertise and human interpretation, and to theorize the Historian in the Loop for the digital age.

