

The Expanded Potential of Linking Different Types of Information and Data in the Digital Humanities

How Do Innovative Approaches Derived from Information Science and Data Science Contribute to a Knowledge Gain Across Disciplines?

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Abstract

This panel will provide insights into current initiatives and projects linking information objects and data from different sources to generate knowledge. It will also shed light on gaps and give an outlook on what is possible with innovative approaches such as artificial intelligence to gain new findings from disparate data sources.

Keywords: information science; data science; data analysis; machine learning; artificial intelligence; data linkage; education research; data regulations

Introduction

Information science has a long tradition in the collection, selection, organization, processing, management and dissemination of data, information and knowledge (Borko, 1968; Saracevic, 2009). What often falls short is the linkage of different types of information as well as combining data from different sources to generate knowledge. However, where information and data remain isolated without a link, their potential can only be used to a limited extent (Husfeldt et al., 2020). Those data collections would become even more valuable and informative when individual characteristics can be linked (FORS,

2020). Linked data from different sources increases accuracy, helps save on costs, and reduces the burden on respondents.

So, the advantages are evident. However, there are many challenges to be overcome: Comprehensive metadata and documentation do often not exist, access to data is complicated or denied, or the use of data and the linking of it can only be done to a very limited extent, just to name a few (*ibid.*).

Which innovative approaches derived from information science and data science enable or improve the linking process? Which legal, political and institutional aspects and frameworks should be considered to improve access and data protection? What can we learn from other fields? Which processes and initiatives are under way to foster data linkage?

In the panel recognized practitioners and researchers will discuss the potential of linking existing data collections for scientific analysis. They will also talk about the opportunities, limits and risks of frameworks and approaches such as artificial intelligence for bringing relevant data sets together using the example of educational data collections.

Format

The event will take place in a 90 minute panel session slot. The program will start with an introduction to the potential of data linkage approaches for a knowledge gain in the digital humanities. Following this brief overview each panelist will give a three minute presentation about their data linkage projects. The second part will be a question and answer session, moderated by Prof. Dr. Vera Husfeldt.

Benefits

The panel will assemble data linkage efforts from the information science and digital humanities perspective. It also provides a good venue to introduce innovative artificial intelligence approaches to the audience.

Panel Chair

Prof. Dr. Vera Husfeldt, Education Informatics, University of Applied Sciences of the Grisons

Participants

Prof. Dr. Christof Wolf, Präsident von GESIS-Leibniz-Institut für Sozialwissenschaften und Inhaber des Lehrstuhls für Sozialstrukturanalyse an der sozialwissenschaftlichen Fakultät der Universität Mannheim

Dr. Manfred Antoni, Institut für Arbeitsmarkt- und Berufsforschung der Bundesagentur für Arbeit, Forschungsdatenzentrum

Dr. Jacques Babel, Leiter „Bildungsperspektiven und Längsschnittanalysen“ Eidgenössisches Departement des Innern EDI, Bundesamt für Statistik BFS

Prof. Dr. Georg Lutz, Director FORS (Swiss Centre of Expertise in the Social Sciences), professor of political science at the University of Lausanne

Prof. Dr. Heiko Rölke (DAViS), Leiter Kompetenzzentrum für Datenanalyse, Visualisierung und Simulation, Professor für Data Science, Fachhochschule Graubünden

Andreas Klausling, Mitglied der Geschäftsleitung educa.ch, Fachagentur für ICT und Bildung, Entwicklung einer Datennutzungspolitik für den Bildungsraum Schweiz

Prof. Dr. Ben Jann, Professur für Sozialstrukturanalyse, Universität Bern

Dr. Marieke Heers, FORS (Swiss Centre of Expertise in the Social Sciences)

Dr. Andrea Diem, SKBF (Schweizerische Koordinationsstelle für Bildungsforschung), Longitudinal-Studien

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