

Zhiwei Hu*, Jiangfeng Liu, and Lei Pei

1. Laboratory of Data Intelligence and Interdisciplinary Innovation, Nanjing University, Nanjing 210023, China; 2. School of Information Management, Nanjing University, Nanjing 210023, China

INTRODUCTION

Digital humanities (DH) is emerging as a promising catalyst for growth in established disciplines, including library and information science (LIS) or iSchools. This study aims to investigate **digital humanities centers (DHCs)** worldwide from the perspective of **scholar composition**, focusing on:

- Who are actively involved in the DH field in respect of **disciplines**?
- What are the varied **development patterns** observed among DHCs?
- What is the currently shaped **community identity** of DH?

RESEARCH DESIGN

Data Collection: 129 DHCs, 3192 scholars (conducted in July 2023)

- Two lists (centerNet & QS Top 200) and a snowball sampling method were used to target DHCs.
- The discipline-related information of scholars, including affiliation, educational background, and self-reported research areas, was collected through DHC websites and academic social networks.

Methods

Classification. Table 1. Disciplinary classification scheme (referred to QS/CIP).

Arts & Humanities	Languages, Literature & Linguistics (LLL), Philosophy & Religious Studies (PRS), History & Archaeology (HA), Art & Design (AD), Performing Arts (PA), Architecture & Built Environment (ABE)
Social Sciences	Sociology & Anthropology (SA), Education (EDU), Economics & Business Management (EBM), Communication, Journalism & Media Studies (CJM), Library & Information Science (LIS), Law, Government & Political Science (LGP)
Natural Sciences & Engineering	Mathematics & Statistics (MS), Physics & Chemistry (PC), Biological & Medical Science (BMS), Psychology & Cognitive Science (PCS), Geography, Earth & Environmental Science (GEE), Computer Science & Engineering (CSE)

Diversity Measurement. ► The **information entropy measure** was adopted, i.e., $Diversity(DHC) = -\log(p)$, where p represents the percentage of the scholars in a given area of expertise. ► Each value is normalized to a **z-score** afterwards.

Community Detection. ► A **cosine similarity network** was built based on scholar composition (nodes: DHCs; edges: values of similarity), where only the top 20% of edges with higher weights were retained. ► The modularity-based **Louvain algorithm** was employed for community detection.

FINDINGS

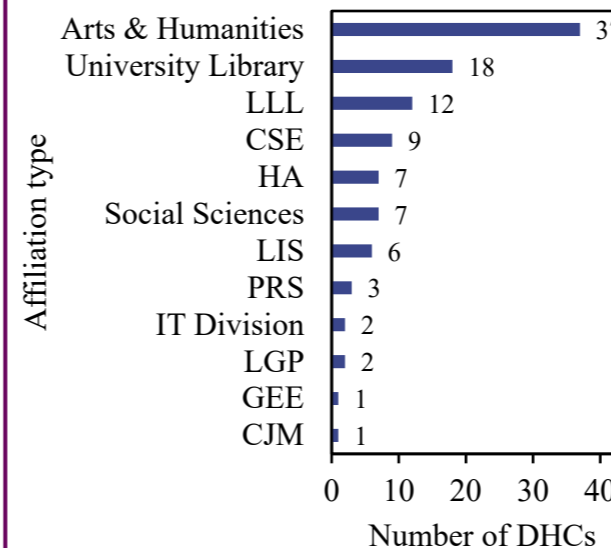


Fig. 1. Distribution of 80 (62%) DHCs by affiliation type.

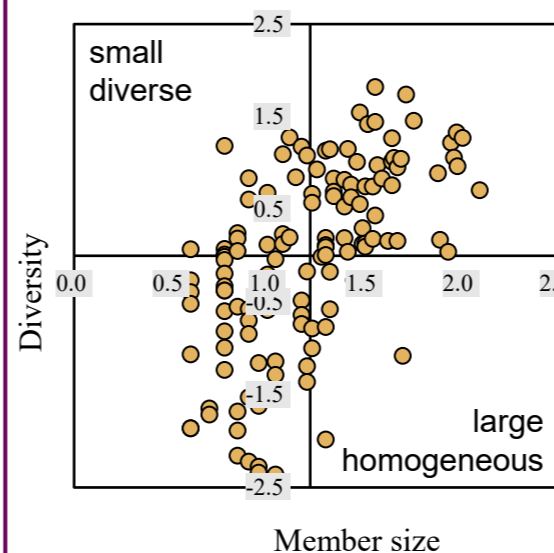


Fig. 3. Four-quadrant diagram of DHCs based on member size and intellectual diversity.

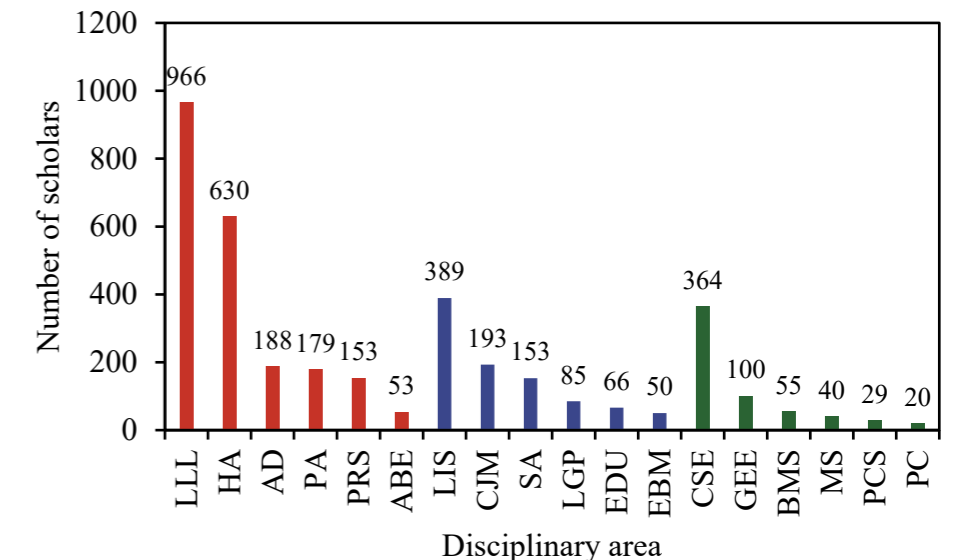


Fig. 2. Distribution of scholars by disciplinary area.

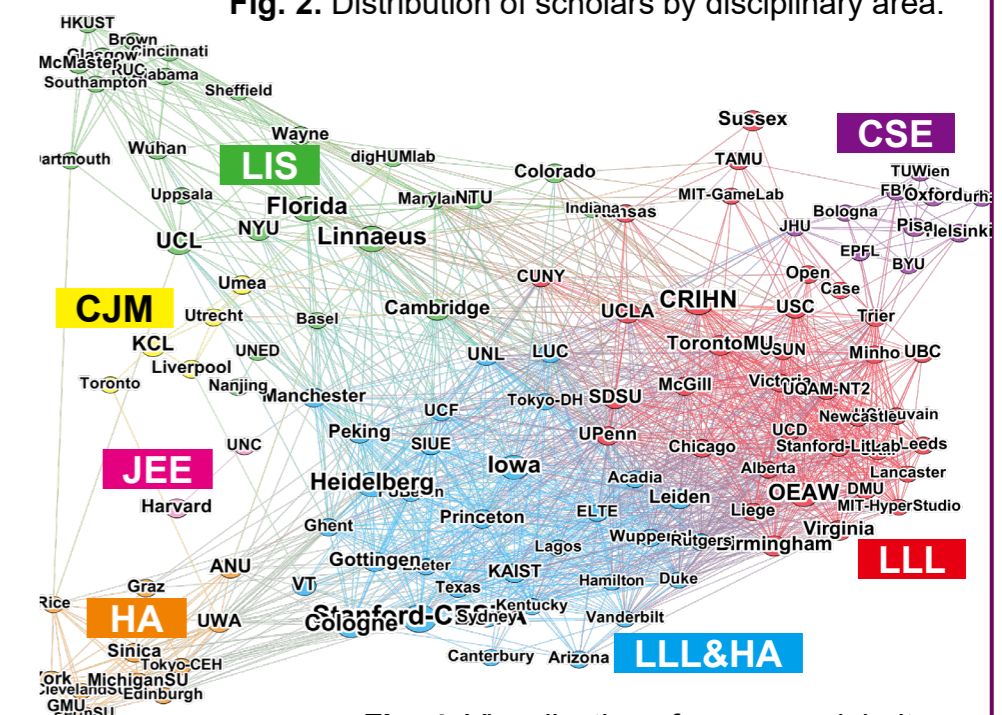


Fig. 4. Visualization of seven modularity classes in the similarity network of DHCs.

DISCUSSION & FUTURE WORK

- A significant presence of **LIS-dominant DHCs** shows the active role of LIS in the DH field.
- The identity of the DH community (**humanity & technology**) aligns with that of iSchools, where humanity remains the core element, with various intellectual sources of digital technologies detected, including humanities itself, computer science, and LIS.
- The interactive mechanisms and collaborative patterns within DHCs need further research.