

Islamicate Digital Humanities Network

The Next Generation

IDHN Online Conference | Digital Hadith Studies

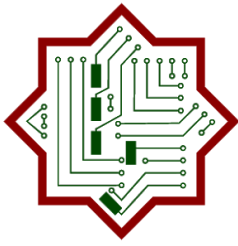
Date and Time:

San Francisco:	Wednesday, January 27, 2021	07 am PDT
Chicago:	Wednesday, January 27, 2021	09 am CDT
Washington, DC:	Wednesday, January 27, 2021	10 am EDT
London:	Wednesday, January 27, 2021	03 pm BST
Berlin:	Wednesday, January 27, 2021	04 pm CET
Beirut:	Wednesday, January 27, 2021	05 pm OEZ
Abu Dhabi:	Wednesday, January 27, 2021	07 pm GST
Tokyo:	Thursday, January 28, 2021	12 am JST

In order to attend the conference please register as a member at <https://idhn.org/contact/> or send us an e-mail to info@idhn.org and request guest access!

While computer scientists in the Middle East and South Asia were developing softwares and algorithms to analyse the canonical Hadith collections, and mostly al-Bukhari's *Sahih*, Western Hadith Studies have remained fairly traditional. Yet Hadith Studies are probably one of the best examples of the importance of being able to change perspectives. We have recently seen significant shifts in the field thanks to the increase in available primary sources, manuscripts and papyri, that have considerably helped Western Hadith scholars to revise many assumptions of the past and gain a more refined understanding of the Hadith literature. The past twenty years have shown the tremendous significance of adopting such a wider perspective. In the same period, computational analysis of textual data has been progressing fast and the large corpus of digitised Hadith material seems to naturally invite scholars to bring the two fields together. Adopting some of the latest computer sciences' algorithms as methods in arguably one of the most traditional fields in Islamic studies is not only a technical challenge due to the Arabic language and the size of the Hadith corpus, it is also a groundbreaking development for Western Hadith studies and any scholars working with Hadith narratives in their sources. The present conference is entirely dedicated to the creative and innovative solutions that a group of scholars is developing in order to allow the automated analysis of all the digitised texts of the Hadith literature.

See below program and abstracts.



Islamicate Digital Humanities Network

The Next Generation

Program

10.00 am EDT

Opening words

Maroussia Bednarkiewicz (Tübingen University)

10:05 am EDT

The *isnalyserjs*: Automation of isnad trees drawing

Stefan Wezel (& Maroussia Bednarkiewicz, University of Tübingen)

Hadith Network: Calculating Volume and Movement in Time and Space

10.20 am EDT

Calculating the Volume of Hadith Transmission in the Hadith Network

Mairaj U. Syed (University of California, Davis)

10.50 am EDT

Calculating the Movement of Hadith Transmission within and Between Cities in Hadith Network

Danny Halawi (University of California, Berkeley)

Hadith Network as a Graph: Systemic Features and Node Prominence

11.20 am EDT

Embedding The Temporal Hadith Network Reveals Three Distinct Phases of Transmission

Nazmus Saquib (Founder/Chief Scientist, Tero Labs)

11.50 am EDT

A network science approach to the historical study of hadith

Shuaib Choudhry (University of Warwick)

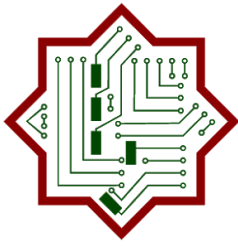
Learning from the Hadith Network: Automatic Narrator Identification

12.20 pm EDT

Automatic Identification of Narrators

Mohamed Alkaoud (University of California, Davis)

12.50 pm EDT Conclusion



Islamicate Digital Humanities Network

The Next Generation

Abstracts

Mairaj U. Syed (University of California, Davis)

Calculating the Volume of Hadith Transmission in the Hadith Network

Abstract: This paper attempts to quantify and locate in space and time hadith transmission in early Islamic history. By applying computational and statistical methods of analysis on the data found in the Gawami al-Kalim hadith software, the paper gives a probabilistic account of how the volume of the transmission of hadith was distributed in different cities over the period of the first 375 years of Islam. The paper describes the nature of the source data, the assumptions made in developing the probabilistic account, the tools used in the analysis, and the results achieved. Based on these results, the paper argues that in different time periods, Madina, Kufa, Basra, and Baghdad rose and fell as the centers of hadith transmission. Lastly, the paper correlates the rise and fall of these cities with changes in their political, cultural, and economic importance.

Danny Halawi (University of California, Berkeley)

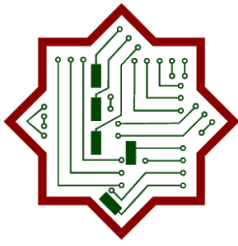
Calculating the Movement of Hadith Transmission within and Between Cities in Hadith Network

Abstract: Generalizing from a subset of a handful of hadiths, historians of hadith transmission developed largely intuitive notions of how all hadith moved within and between cities as they were transmitted. Our project uses computational techniques to place hadith transmissions in the Gawami al-Kalim dataset in both space and time. Our work maps 1,033,758 instances of transmission across 593 cities over a 400 year time-span. We then track and quantify the movement of hadiths over time, as it moved within and between cities. We lastly demonstrate how such a model can be used to paint the movement of the themes of hadith across time and space.

Nazmus Saquib (Founder/Chief Scientist, Tero Labs)

Embedding The Temporal Hadith Network Reveals Three Distinct Phases of Transmission

Abstract: Theoretically, isnads from all hadiths can be put together to form a global network of student-teacher relationships, which is a type of citation network. In the field of network analysis, such citation networks usually have predictable structures that provide a way to visualize them and observe how their global dynamics evolves over time. The hadith network, on the other hand, probably because it lasted many centuries, has a more complex structure. Given its complexity and size, standard visualizations that allow researchers to analyze the network's structural features are severely limited. In this work, we use the Mercator graph embedding algorithm to project a graph (sets of nodes and relationships between them) to a polar coordinate space, in order to lay out the nodes over a circular shape. The layout optimizes the placement based on which node is related to which other ones. We demonstrate that when compared to other embedding schemes and visualizations, the Mercator embedding produces a more useful faithful layout and visualization. We show why this is the case by using the independent information we know about the history of hadith transmission. Our explanation and the accompanying visualizations reveal three distinct phases of hadith transmission in early Islamic history. We finish by discussing the implications of this work and possible ways the work could be expanded for future research directions.



Islamicate Digital Humanities Network

The Next Generation

Shuaib Choudhry (University of Warwick)

A network science approach to the historical study of hadith

Abstract: Hadith transmission is a vibrant example of the mass transmission of information between individuals connected to each other through space and time. Another way of describing it is to consider it as a spatiotemporally embedded network, where the nodes represent an individual who participated in the transmission of hadith and an edge between two nodes represents an instance of transmission of a hadith between them. Defining it as such opens up the possibility of applying formalised metrics (e.g. pagerank, eigenvector, betweenness centrality) that allow scholars to identify and rank the prominence and significance of individual nodes. We apply this toolbox to the hadith network and compare it to existing scholarship that identifies specific narrators as significant in some way and note the unique insights provided by the formalised networks not captured in the qualitative intuitive judgments of hadith scholars.

Mohamed Alkaoud (University of California, Davis)

Automatic Identification of Narrators

Abstract: The number of unique individual narrators found in hadith numbers in the tens of thousands. Identifying each narrator is of utmost importance to scholars of hadith, allowing them to better measure the accuracy of narrations and identify the date and geographies of their circulation. The bad news is that linking narrators to their biographies is difficult, because the names of the narrators cited in the texts of the reports can be ambiguous; they can be first names, nicknames, a relationship (e.g. 'I heard my uncle say'), or something else, and because biographical information about each narrator can be found in any number of works of narrator biographies. The good news is that this information has been digitized and linked to the names of narrators as they exist in hundreds of thousands of isnaads. In this work, we propose a state-of-the-art natural language processing method that relies on existing digitized datasets to automate the identification of narrators of any given hadith.