



Júlia Koltai

Senior Research Fellow (TK Recens)

- **Academic Title:** PhD
- **Email:** koltai.julia@tk.hun-ren.hu
- **Phone:** +36 1 224 6700 / 5454
- **Building:** T. (Floor, room: 1.25.)

Selected Publications

Selected publications of the last five years

2022 Understanding hesitancy with revealed preferences across COVID-19 vaccine types. Scientific Reports 12(13293). (co-authors: Kristóf Kutasi, Ágnes Szabó-Morvai, Gergely Röst, Márton Karsai, Péter Biró and Balázs Lengyel)

2022 Reconstructing social mixing patterns via weighted contact matrices from online and representative surveys. Scientific Reports 12(4690). (co-authors: Orsolya Vásárhelyi, Gergely Röst, and Márton Karsai)

2021 The presence of occupational structure in online texts based on word embedding NLP models. EPJ Data Science 10(55). (co-authors: Zoltán Kmetty and Tamás Rudas)

2021 “Splendid Isolation”: The reproduction of music industry inequalities in Spotify’s recommendation system. New Media & Society. Online first. (co-authors: Tamás Tófalvy)

2021 The increasing importance of friends: Changes in core discussion network composition in post-communist Hungary between 1997 – 2015. Social Networks 66. pp. 139-145. (co-authors: Fruzsina Albert and Beáta Dávid)

2021 Discovering sociological knowledge through automated text analytics In: Tamás Rudas – Gábor, Péli (szerk.) Pathways Between Social Science and Computational Social Science – Theories, Methods and Interpretations. New York, NY, Springer. (co-author: Renáta Németh)

2020 The Impact of COVID-19 on the Gender Division of Childcare Work in Hungary. European Societies 23(sup1) pp. S95-S110. (DOI: 10.1080/14616696.2020.1817522) (co-authors: Fodor, Éva; Gregor, Anikó; Kovács, Eszter)

2020 Exploring the Dynamic Changes of Key Concepts of the Hungarian Socialist Era with Natural Language Processing Methods. Historical Methods: A Journal Of Quantitative And Interdisciplinary History. (co-authors: Martina Katalin Szabó, Orsolya Ring, Balázs Nagy, László Kiss, Gábor Berend, László Vidács, Attila Gulyás and Zoltán Kmetty)

2019 Collapse of an online social network: Burning social capital to create it? In: Social Networks 57: 43-53. (co-authors László Lőrincz, Anna Fruzsina Győr and Károly Takács)

2018 Core Ties Homophily and Sociocultural Divides in Hungary from 1987 to 2015 In: International

Journal of Sociology. 47(3): 228-249. (co-authors Zoltán Kmetty and Róbert Tardos)

Research Projects

2022-2027 principal investigator

“Momentum” Research Grant of the Hungarian Academy of Sciences. Title of the research: Social Structure and Inequalities Through the Lens of Digital Data. Name of the research group: MTA-TK Lendület “Momentum” Digital Social Science Research Group for Social Stratification (DS4 Momentum Research Group)

2022-2026 principal investigator

National Laboratory Program of the National Research, Development and Innovation Office in Hungary (RRF-2.3.1-21-2022-00006) Name of the research group: Social Science Research Group, National Laboratory for Health Security

2022-2025 co-applicant

Grant of the Vienna Science and Technology Fund (WWTF). Title of the research: Humanized Algorithms: Identifying and Mitigating Algorithmic Biases in Social Networks. Principal investigator: Fariba Karimi (Complexity Science Hub, Vienna), co-applicant: Markus Strohmaier (RWTH Aachen)

2019-2024 principal investigator

Grant of the National Research, Development and Innovation Office in Hungary (FK131826). Title of the research: Social History Analysis of the Press between 1945 and 1989 with the Methods of Natural Language Processing (NLP)

2019-2022 principal investigator

Premium Postdoctoral Grant of the Hungarian Academy of Sciences. Title of the research: Application of Big Data and Natural Language Processing Methods in the Social Sciences.

Academic Career

2020-2022 Researcher in the Data Science team of the Hungarian Coronavirus Task Force
Bolyai Institute, University of Szeged

2019-2022 Premium postdoctoral researcher
Computational Social Science - Research Center for Educational and Network Studies (CSS-RECENS),
Centre for Social Sciences

2018-2020 researcher
ELTE Faculty of Social Sciences – Research Centre for Computational Social Science

2016-2017 senior researcher
ELTE Faculty of Social Sciences – National Council for Crime Prevention

2014-2018 research fellow
Hungarian Academy of Sciences, Center for Social Sciences, Institute of Sociology

2011-2013 researcher

ELTE Faculty of Social Sciences – „Budapest 2012” research

2011-2012 researcher

ELTE Faculty of Social Sciences – „Border as a complex system” research

2011 researcher

ELTE Faculty of Social Sciences – „Network of the roma people in Budapest” research

2009-2010 expert on methodology

ELTE System for tracking graduates’ careers – member of the preparatory methodological team

2009-2010 researcher

Hungarian Academy of Sciences, Institute of Sociology – research on “Knowledge and Policy”

2007-2010 researcher

International Social Justice Project – Hungarian research

2007 researcher and analyst

Hungarian Academy of Sciences, Institute of Sociology – research on the pronounce of “special needs” of Roma children

2005 organizer and analyst

Deliberative Poll about Roma and Non-roma (leader of the research: Mária Székelyi DSc and Antal Örkény DSc)

Education

2022 Habilitation

ELTE Faculty of Social Sciences

2007-2013 PhD

ELTE Doctoral School of Sociology

2002-2007 Sociologist, survey statistician

ELTE Faculty of Social Sciences, Master Program of Sociology

1996-2002 high school certificate of education

ELTE Radnóti Miklós School

Membership in Academic and Professional Organisations; Editorial Board Membership

Membership of scientific associations

International Sociological Association

International Sociological Association RC28 – Social Stratification

International Sociological Association RC33 – Logic and Methodology in Sociology

Complex Systems Society

Magyar Szociológiai Társaság (Hungarian Sociological Association)

Hungarian Academy of Sciences, IX. Section of Economics and Law - including sociology, demography and political sciences

Roles in Scientific Journals

Szociológiai Szemle (Review of Sociology): editor in chief

Methods and Measurement (Frontiers): editor

Selected conferences and workshops

2021

Why Do Social Networks Die? Keynote presentations at the conference Women in Data Science Central and Eastern Europe. Online. Chair at the Conference on Complex Systems 2021. Title of Session: Social Complexity III. Lyon, France.

Reconstructing social mixing patterns via weighted contact matrices from online and representative surveys. Presentation at the satellite event 'Complex Systems for the Most Vulnerable' of the Conference on Complex Systems 2021 Lyon, France. (co-authors: Márton Karsai, Orsolya Vásárhelyi, and Gergely Röst) Chair at the Networks 2021 (joint Sunbelt and NetSci) conference. Title of Session: Social Media & Online Networks. Online.

"Splendid Isolation": A Network Based Reproduction of Geographic Inequality in Spotify' Recommendation System. Presentations at the Networks 2021 (joint Sunbelt and NetSci) conference. Online. (co-author: Tófalvy Tamás)

Age contact matrix reconstruction from online and representative samples. Presentations at the Networks 2021 (joint Sunbelt and NetSci) conference. Online. (co-authors: Orsolya Vásárhelyi, Gergely Röst, and Márton Karsai)

Mapping the network of anti-vaccine and pro-vaccine supporters' - Two discourses, opposite worlds? Presentations at the Networks 2021 (joint Sunbelt and NetSci) conference. Online. (co-authors: Zoltán Kmetty, Eszter Katona; Krisztián Boros, Anna Molnár, and Bence Ságvári)

The increasing importance of friends: Changes in core discussion network composition in post-communist Hungary between 1997 - 2015. Presentations at the Networks 2021 (joint Sunbelt and NetSci) conference. Online. (co-authors: Beáta Dávid and Fruzsina Albert)

Context of Burtiness in Facebook Activities. Poster at the Networks 2021 (joint Sunbelt and NetSci) conference. Online. (co-authors: Zoltán Kmetty, Márton Karsai and János Kertész)

Detecting Latent Change-points with Topic Model. Presentation at the yearly meeting of the International Sociological Association RC33 Logic & Methodology in Sociology. Online. (co-author: Anna Molnár)

Társadalmi egyenlőtlenségek megjelenése a járványterjedésben.[The emergence of social inequalities in the spread of epidemics] Presentation at the COVID-19 Conference of Milton Friedman University. online (co-author: Márton Karsai)

2020

Context of burstiness in Facebook activities? Poster presentation at the International Conference on Computational Social Science. MIT - Massachusetts Institute of Technology - online due to COVID-19. (co-authors: Zoltán Kmetty, Márton Karsai and János Kertész)

Does diversity kill OSNs? Poster presentation at the International Conference on Computational Social Science. MIT - Massachusetts Institute of Technology - online due to COVID-19 (co-authors: László Lőrincz, Johannes Wachs, and Károly Takács)

Keynote speaker. Title of the talk: Az iWiW összeomlása - Felégetjük-e kapcsolati tőkénket azért, hogy újat teremtsünk? (The collapse of the social network iWiW- do we burn our social capital to create new?)

A Magyar Internet Történetei Konferencia. (Conference on the Stories of the Hungarian Internet) Budapest University of Technology and Economics, Budapest, Hungary

Organizer of the regional event of Stanford University's conference series, Women in Data Science.

Central European University, Budapest. (co-organizer: Orsolya Vásárhelyi) Co-organizer of the Workshop

on the Concept of Quality for Big Data. Eötvös Loránd University, Faculty of Social Sciences, Budapest, Hungary. (co-organizer: Tamás Rudas and Renáta Németh)

Does diversity kill OSNs? Presentation at the Sunbelt Conference (biyearly conference of the International Network for Social Network Analysis). Paris, France – online due to COVID-19. (co-authors: László Lőrincz, Johannes Wachs, and Károly Takács)

2019

The Presence of Social Structure in Online Texts Based on Word Embedding NLP Models. Presentation at ISA (International Sociological Association) RC28 Summer Meeting. Princeton University, New Jersey, USA. (co-authors: Kmetty Zoltán and Rudas Tamás)

Assessing the Effect of Questionnaire Design on Unit and Item Nonresponse: Evidence from an Online Experiment. Presentation at the conference of the European Survey Research Association (ESRA). Zagreb, Croatia. (co-authors: Kmetty Zoltán and Stefkovics Ádám)

The Presence of Social Structure in Online Texts Based on Word Embedding NLP Models. Presentation at the International Conference on Computational Social Science. University of Amsterdam, The Netherlands. (co-authors: Kmetty Zoltán and Rudas Tamás)

Does diversity kill OSNs? Poster presentation at the Conference on Complex Networks. Lisbon, Portugal. (co-authors: László Lőrincz, Johannes Wachs, and Károly Takács)

Organizer of the regional event of Stanford University's conference series, Women in Data Science. Central European University, Budapest. (co-organizer: Orsolya Vásárhelyi)

2018

Old problems, new approaches: temporal trends of suicide related expressions in different online social media networks - a multiplatform study. Presentation at the XXXVIII Sunbelt Conference. University of Utrecht, The Netherlands. (co-authors: Károly Bozsonyi and Zoltán Kmetty)

A big data lehetséges szerepe a választási előrejelzésekben: egy módszertani kísérlet. (The Potential Role of Big Data in Estimating Party Preferences: a Methodological Experiment) Presentation at the 24th Conference of the Hungarian Association of Political Science. Budapest, Hungary. (co-author: Ádám Stefkovics)

The changes of attitudes towards immigrants in the turbulent years of the anti-immigrant campaign in Hungary. Presentation at the European Social Survey - 2nd ESS Visegrad Regional Network Conference. Budapest, Hungary. (co-author: Ildikó Barna)

2017

The diverse role of social network in the transmission of inequalities. Presentation at the ISA (International Sociological Association) RC28 Summer Meeting. Columbia University, New York, USA. (co-author Zoltán Kmetty)

Collapse of an Online Social Network: The Blame on Social Capital. Presentation at 3rd European Conference on Social Networks. Mainz, Germany (co-authors László Lőrincz, Anna Győr and Károly Takács)

Theory in practice. Diffusion of and innovation in social and physical space. Presentation at the Computational Social Science at Work: Life Cycle of an Online Social Network. Budapest, Hungary. (co-author Bence Ságvári)

Collapse of an Online Social Network: The role of social capital. Presentation at the Computational Social Science at Work: Life Cycle of an Online Social Network. Budapest, Hungary. (co-authors László Lőrincz, Anna Győr and Károly Takács)

Core discussion network stability and changes over 20 years between 1997 and 2015. Presentation at the

64th Jour Fixe, Academic Symposium. Hungarian Academy of Sciences, Centre for Social Sciences, Institute of Sociology. Budapest, Hungary (co-authors: Fruzsina Albert and Beáta Dávid)

The diverse role of social network in the transmission of inequalities. Presentation at the 61st Jour Fixe, Academic Symposium. Hungarian Academy of Sciences, Centre for Social Sciences, Institute of Sociology. Budapest, Hungary (co-author: Zoltán Kmetty)

Az egyenlőtlenségek továbbörökítésének kapcsolathálózati aspektusai (The network aspects of the transmission of inequalities). Presentation at the Conference of the Birthday of Rudolf Andorka. Budapest, Hungary (co-author: Zoltán Kmetty)

Szülői egészségértés és vakcinációs hajlandóság 2017-ben Magyarországon (Parental Health Literacy and Willingness of Vaccination in Hungary 2017). Presentation at the Annual Conference of the Association of Hungarian Pediatricians. Győr, Hungary. (coauthors: Zsófia Gács and Eszter Kun)

Juvenilis idiopathias arthritissel gondozott gyermekek szüleinek egészségértése (Health Literacy of parents of children with Juvenilis idiopathias arthritis) Presentation at the Annual Conference of Hungarian Rheumatologists. Siófok, Hungary. (co-authors: Zsófia Gács, Bianka Gaál, Angelika Kovács, Emese Kovács, Petronella Purgai, Gábor Csanády and Tamás Constantin)

Minden, amit tudni akartál a logisztikus regresszióról, de nem merted megkérdezni (Everything you wanted to know about logistic regression, but was afraid to ask) Presentation of the 'Módszeresen' – Regular Presentation on Social Research Methodology. Budapest, Hungary (co-author: Dorottya Kisfalusi)

Awards and Honours

Successful Grants and Awards

2022-2027

“Momentum” Research Grant of the Hungarian Academy of Sciences. Title of the research: Social Structure and Inequalities Through the Lens of Digital Data. Name of the research group: MTA-TK Lendület “Momentum” Digital Social Science Research Group for Social Stratification (DS4 Momentum Research Group)

2022-2026

National Laboratory Program of the National Research, Development and Innovation Office in Hungary (RRF-2.3.1-21-2022-00006) Name of the research group: Social Science Research Group, National Laboratory for Health Security

2022-2025

Co-applicant of the grant 'Humanized Algorithms: Identifying and Mitigating Algorithmic Biases in Social Networks.' Principal investigator: Fariba Karimi (Complexity Science Hub, Vienna). Other co-applicant: Markus Strohmaier (RWTH Aachen). (part of the funding for Centre for Social Sciences: 25.150 euro)

2019-2022

Grant of the Premium Postdoctoral Research Program at the Hungarian Academy of Sciences. Title of the research: 'The application of Big Data and Natural Language Processing in the Social Sciences' (funding: ~97.000 euro)

2019-2024

Principal investigator of the Grant of the National Research, Development and Innovation Office in Hungary. Title of the research: „Social history analysis of the press between 1945 and 1989 with the methods of natural language processing (NLP)" (funding: ~78.000 euro)

2020

Award for the year's promising researcher of Faculty of Social Sciences, Eötvös Loránd University

2020

Award for the most prestigious publication of the year 2019. Hungarian Academy of Sciences, Centre for Social Sciences, Computational Social Science - Research Center for Educational and Network Studies (CSS-RECENS)

2017-2018

Grant of the New National Excellence Programme. Title of the research: Big Data in Social Sciences: Possibilities and Methodological Challenges of New Type of Data. (funding: ~9.000 euro)

2007-2010

Grant of the ELTE Doctoral School of Sociology

2007

Award for the best thesis (Faculty of Social Sciences, Eötvös Loránd University)

2006-2007

Grant of the Republic

2005-2006

Grant of the Republic

2004-2005

Grant of the Republic

Teaching Experience

2014- assistant professor (from 2019, part time)

ELTE Faculty of Social Sciences, Institute of Empirical Studies, Department of Social Research Methodology. Courses: Programming II. (Introduction to Python); Conceptual Foundations of Social Networks; Methodology for PhD Students; Data Processing and Analysis I-II-III; Methodology and Statistics I-II; Data Collection; Introduction to Social Research Methodology; etc.

2019-2021 visiting faculty

Central European University, Department of Network and Data Science (courses: Social Networks 1; Social Networks 2)

2008- 2014 assistant lecturer

ELTE Faculty of Social Sciences, Department of Social Research Methodology

2019-2020 winter school instructor

European Consortium for Political Research (ECPR) Winter School in Methods and Techniques at the University of Bamberg. Title of the course: „Structural Equation Modeling in R”

2018-2019 summer school instructor

European Consortium for Political Research (ECPR) Summer School in Methods and Techniques at the Central European University. Title of the courses: „Introduction to Logistic Regression and General Linear Models: Binary, Ordered, Multinomial and Count Outcomes”, „Math for Social Scientists” and „Survey Design and Analysis”

2009-2010 external lecturer

Széchenyi István College for Advanced Studies

2007-2008 lecturer as a PhD student

ELTE Faculty of Social Sciences, Department of Social Research Methodology

2005-2008 member of the consultation team on mathematical statistics

ELTE Faculty of Social Sciences, Consultation Team on Mathematical Statistics

2004-2007 demonstrator

ELTE Faculty of Social Sciences, Department of Social Research Methodology

2004-2005 demonstrator

ELTE Faculty of Social Sciences, Department of Statistics

Further Affiliations

2016-2017 analyst researcher of the research on Hungarian Parental Health Literacy

Szinapszis Ltd.

2017 expert on research methodology of the research about the practical realization of the directive on access to a lawyer

Hungarian Helsinki Committee

2015 expert on research methodology of the research about the understanding the letter of rights

Hungarian Helsinki Committee

2015 analyst researcher of the research on Hungarian Health Literacy – connected to The European Health Literacy Project

Szinapszis Ltd.

2013 Creation of the research design, empirical and analytical researcher in the research on disciplinary procedures in the Hungarian detention facilities

Hungarian Helsinki Committee

2011-2013 researcher – processing and analyzing archives data, making and analyzing interviews

National Municipality of the Hungarian Greeks – „Research on the Hungarian Greek people”

2007 weighting data of empirical databases

TÁRKI Zrt. – Tamás Rudas

Other relevant CV records

Professional knowledge of Microsoft Office programs (Word, Excel and PowerPoint)

Professional knowledge of Python

Professional knowledge of R

Professional knowledge of SPSS (Statistical Package of Social Sciences)

Professional knowledge of AMOS (program for Structural Equation Modelling)

Professional knowledge of STATA (statistical program)

Knowledge of Clementine (datamining program)

Languages

- English (Proficient)
- French (Intermediate)