

Education

- 01/2018 - **Doctor of Sciences ETH Zurich,**
09/2022 *Thesis: Social differentiation during the European Reformation: Statistical analyses of letter correspondence networks,*
Chair of Systems Design, ETH Zurich, Switzerland,
Supervisor: Prof. Frank Schweitzer.
- 09/2018 **Reproducibility in Computational Science Summer School,**
EPFL Lausanne, Magliaso, Switzerland.
- 09/2015 - **M.Sc. Computational Science,**
12/2017 *University of Amsterdam, Netherlands.*
- 06/2017 - **Complex Systems Summer School,**
07/2017 *Santa Fe Institute, NM, USA.*
- 10/2011 - **B.Sc. Psychology with Cognitive Science,**
07/2014 *University of Sussex, UK.*

Employment

- 10/2022 - **Postdoc in Computational Social Science,**
Chair of Systems Design, ETH Zurich, Switzerland,
Prof. Frank Schweitzer.
- 11/2014 - **Intern at Netherlands Organisation for Applied Scientific Research (TNO),**
06/2015 *Soesterberg, Netherlands.*
- 06/2013 - **Junior research associate at Department of Informatics,**
06/2014 *University of Sussex, UK.*

Publications

- 05/2023 **Roller, R. 2023: Operationalising territories in 16th century Europe: a critical reflection on spatial concepts.,**
Digital Humanities Research. Forthcoming,
Earlier version: Vectorizing maps to generate geo-spatial data on territories of the Holy Roman Empire., *socarxiv*. doi=10.31235/osf.io/y9v68.
- 01/2023 **Roller, R. 2023: Theory-Driven Statistics for the Digital Humanities: Presenting Pitfalls and a Practical Guide by the Example of the Reformation.,** *Journal of Cultural Analytics,* vol 7, no. 4.
- 12/2022 **Schweitzer, F., Andres, G., Casiraghi, G., Gote, C., Roller, R., Scholtes, I., Vaccario G. and Zingg, C. 2022: Modeling social resilience: Questions, answers, open problems.,** *Advances in Complex Systems,* vol 5, no. 8.

Preprints and Working Papers

- 07/2023 **Brandenberger L. and Roller, R: Effects of legislative seating arrangements on parliamentary productivity,**
Working paper,
Paper presentation at the ECPR Standing Group of Parliaments Conference, Vienna, AU, July 6-9, 2023.

- 05/2023 **Roller, R: Tracing the Footsteps of Ideas: Time-respecting Paths Reveal Key Reformers and Communication Pathways in Protestant Letter Networks.**,
Under review at Journal of Historical Network Research,
SocArxiv. doi=10.31235/osf.io/cfqry.
- 05/2023 **Roller, R. 2023: Modell.**,
Zeitschrift für digitale Geisteswissenschaften, Working paper 2, doi=10.17175/wp_2023_009.
- 04/2023 **Roller, R., Schweitzer, F. and Strohm, C. 2021: The role of neighbourhood relations in confessionalisation.**,
SocArxiv. doi=10.31235/osf.io/67vgr.
- 05/2021 **Roller, R. and Schweitzer F., 2021: A new theory of social roles in networks.**,
SocArxiv. doi=10.31235/osf.io/xkafb.

Talks

- 07/2023 **Path statistics for letter correspondence networks of the European Reformation**,
GraphHNR conference,
Mainz, Germany.
- 07/2023 **Soziale Differenzierung während der Europäischen Reformation: Rollenanalyse in Briefkorrespondenznetzwerken**,
Jour Fixe: Forschungsplattform Frühe Neuzeit Workshop,
Mainz, Germany.
- 02/2023 **Netzwerkanalyse zur Komposition und Evolution innerprotestantischer Gruppen im 16. Jahrhundert**,
CAIDAS Workshop,
Würzburg, Germany.
- 01/2023 **Role detection in communication networks: About specialising protestants and deceived & deceiving employees**,
Research visit at Department of Sociology/SCOOP Project,
Groningen, Netherlands.
- 07/2022 **Reuchlins Briefwechsel: Statistische Analysen für Korrespondenznetzwerke**,
Internationaler Reuchlin Kongress,
Pforzheim, Germany.
- 02/2022 **Statistische Analysen für Briefkorrespondenznetzwerke und ihren geografischen Raum**,
Möglichkeiten computergestützter Auswertung von historischen Korrespondenzen,
Heidelberg, Germany.
- 01/2022 **Nachbarschaftseffekte während der europäischen Reformation**,
Oberseminar Digital Humanities,
Passau, Germany (online).
- 09/2021 **Polarization in the 16th century: Ideological groups during the Reformation**,
European Conference on Social Network Analysis (EUSN),
Naples, Italy (online).
- 07/2021 **Role detection in networks: Social differentiation during the Reformation**,
Historical Network Research conference (HNR),
Luxembourg, Luxembourg (online).
- 04/2021 **Modeling Time in Interactions: Temporal paths in a 16th century network**,
Historical Network Research lunch lecture (HNR),
online.
- 03/2021 **Räumliche Aspekte der Konfessionalisierung: Vektorisierte Territorien des HRR erstellen und nutzen**,
Geography meets Digital Humanities: Neuere Ansätze raumbezogener Modellierung,
Erlangen, Germany (online).

- 10/2020 **Warum wurde Luther protestantisch? Erklärungsnarrative mit statistischen Modellen entwickeln und zur Theoriebildung nutzen,**
Theorytellings Workshop der DHd AG Theorie,
Leipzig, Germany.
- 09/2020 **A letter network to test theories,**
CUDAN Satellite at NetSci,
Rome, Italy (online).
- 03/2020 **Wie steuert geografische Distanz das Briefkorrespondenznetzwerk der Reformatoren? Eine Netzwerkanalyse,**
Digital Humanities im deutschsprachigen Raum Konferenz (DHd),
Paderborn, Germany.
- 09/2019 **Statistical inference for letter network of Reformation,**
European Conference on Social Network Analysis (EUSN),
Zurich, Switzerland.
- 07/2019 **Network regression reveals factors driving the letter correspondence of 16th century reformers,**
International Conference on Computational Social Science (IC²S²),
Amsterdam, Netherlands.

Research Visits

- 07/2023 **Forschungsplattform Frühe Neuzeit,**
Talk: Soziale Differenzierung während der Europäischen Reformation: Rollenanalyse in Briefkorrespondenznetzwerken,
Mainz, Germany.
- 01/2023 **SCOOP Project: Sustainable Cooperation,**
Talk: Role detection in communication networks: About specialising protestants and deceived & deceiving employees ,
Groningen, Netherlands.
- 06/2019 **Austrian Centre for Digital Humanities,**
Talk: A workflow for automated vectorisation of raster maps,
Vienna, Austria.
- 01/2019 **Heidelberg Academy of Sciences and Humanities,**
Talk: Das Briefkorrespondenznetzwerk der Reformatoren,
Heidelberg, Germany.

Teaching

University courses

- 02 - 06/2023 **Introductions to Digital Humanities,**
Invited speaker for 2 hour lecture on 'Network analysis in the DH',
University of Bern, Switzerland.
- 09 - 12/2022 **Data Science for Social Challenges,**
to be repeated in 2023 *Co-organiser and co-lecturer of a 3 ECTS Master course,*
ETH Zurich, Switzerland.
- 08/2021 **Digital Humanities Netzwerke,**
Invited speaker for 2 hour lecture on 'Modeling time in historical networks',
Heinrich-Heine-Universität Düsseldorf, Germany.

Supervision

- 03/2019 **Master thesis of Leonie Bauer on the prediction of needed help in disaster regions from Instagram posts,**
ETH Zurich, Switzerland.

09/2018 **Semester project of Long Him Cheung on modeling emotions of users in a product reviews communities,**
ETH Zurich, Switzerland.

Community activities

Organisation of Scientific Events

- 01/2021 - **Workshop on ‘Möglichkeiten computergestützter Auswertung von historischen Korrespondenzen’,**
02/2022 *Co-organiser and speaker,*
9 - 11 February 2022,
Heidelberg, Germany.
- 06/2018 **Big Data in the Field Weekend Seminar,**
Co-organiser and participant,
German Academic Foundation,
Berlin, Germany.

Reviewing activities

- 2023 - **Perspectives on Psychological Science journal.**
- 2021 - **Conference on Computational Humanities Research (CHR).**
- 2021 - **Conference of the Digital Humanities in the German-speaking area,**
Jahrestagung des Verbands “Digital Humanities im deutschsprachigen Raum” (DHd).
- 2020 - **Advances in Complex Systems journal.**

Editorial activities

- 2022 **Advances in Complex Systems journal,**
Special Issue on “Cultural Complexity”,
Co-guest editor.

Memberships

- 2020 - **Working group “Theory” of the DHd,**
Organisor of a bi-monthly paper-circlce,
Contributor to special issue on glossary of DH terms.

Awards

- 09/2020 **Student grant for NetSci conference,**
Reduced conference fee from 180€ to 50€.
- 01/2020 **Travel grant for DHd conference (Digital Humanities im deutschsprachigen Raum),**
400€.
- 02/2012 - **Member of German National Academic Foundation.**
- 12/2017
- 07/2014 **Stuart Sutherland Prize,**
For an outstanding undergraduate dissertation in psychology at the University of Sussex.

Languages

German: native; English: fluent; Dutch: fluent; French: basic; Italian: basic