



Ramona Roller

Quantitative
social scientist



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About me

Social scientist with a strong quantitative background. Fascinated by complex systems and their mathematical descriptions. Currently working on reconstruction methods for historical letter correspondence networks. Future aim: Develop spatio-temporal null models for historical letter correspondence networks.

Skill

Python

Social network analysis

Socio-historical data analysis

Data visualisation

Agent-based modeling

(*)[The skill scale is from 0 (Fundamental Awareness) to 5 (Expert).]

Education

since 01/2018

Ph.D. candidate in data-driven modeling
of social systems

ETH Zurich, CH

- *Develop quantitative statistical methods to analyse socio-historical data.*
- *Construct and visualise temporal network models.*
- *Expected graduation: June 2022.*

09/2018

Participant at EPFL's Reproducibility in Computational Science Summer School

Magliaso, CH

- *Acquired profound skills in writing reproducible research papers and data management. Specific tools include Git, R Shiny, and Renga.*

09/2015 - 12/2017

M.Sc. Computational Science

University of Amsterdam, NL

- *Thesis: Optimising Resource Allocation in Socio-economic Systems with the Minority Game: A Case Study on Electric Cars in Amsterdam.*

06/2017 - 07/2017

Participant at SFI's Complex Systems Summer School

Santa Fe Institute, USA

- *Passed highly competitive world-wide application process.*
- *Deepened numerical and computational methods for the analysis of complex systems.*

10/2011 - 07/2014

B.Sc. Psychology with Cognitive Science

University of Sussex, UK

- *Thesis: Differences between conscious and unconscious learning of social rules.*

Research and Work Experience

11/2014 - 06/2015

Intern at Netherlands Organisation for Applied Scientific Research (TNO)

Soesterberg, NL

- *Developed a Linked Data model to cope with power cuts caused by flooding.*
- *Applied qGIS to visualise power stations and water levels.*

06/2013 - 06/2014

Junior research associate at Department of Informatics University of Sussex, UK

- *Developed a novel method to quantify and visualise cognitive chunks based on the sequences of participants' drawings of electrical circuit diagrams.*

Publications

- Roller, R, 2021: Vectorizing maps to generate geo-spatial data on territories of the Holy Roman Empire. *socarxiv*. doi=10.31235/osf.io/y9v68.

Conference attendances and research visits

09/2021

European Conference on Social Network Analysis (EUSN)(online)

- *Talk: 'Polarization in the 16th century: Ideological groups during the Reformation'.*
- *Access talk at https://www.sg.ethz.ch/team/ramona_roller/data/2021-09-08_EUSN.pdf*

07/2021

HNR conference (Historical Network Research)

(online)

- *Talk: 'Role detection in networks: Social differentiation during the Reformation'.*
- *Access talk at https://www.sg.ethz.ch/content/team/Ramona_Roller/data/2021-07-01_HNR.pdf*

04/2021	<p>HNR lunch lecture (Historical Network Research) (online)</p> <ul style="list-style-type: none"> • Talk: <i>'Modeling Time in Interactions: Temporal paths in a 16th century network'</i>. • Access talk at https://www.sg.ethz.ch/data/2021-04-15_HNR.pdf
03/2021	<p>Geography meets Digital Humanities: Neuere Ansätze raumbezogener Modellierung Erlangen (online), DE</p> <ul style="list-style-type: none"> • Talk: <i>'Räumliche Aspekte der Konfessionalisierung: Vektorisierte Territorien des HRR erstellen und nutzen'</i>. • Access talk at https://www.sg.ethz.ch/team/ramona_roller/data/2020-03-12_Erlangen.pdf
10/2020	<p>Theorytellings Workshop der DHd AG Theorie Leipzig, DE</p> <ul style="list-style-type: none"> • Talk: <i>'Warum wurde Luther protestantisch? Erklärungsnarrative mit statistischen Modellen entwickeln und zur Theoriebildung nutzen'</i>. • Access talk at https://www.sg.ethz.ch/team/ramona_roller/data/2020-10-09_Leipzig.pdf
09/2020	<p>CUDAN Satellite at NetSci Rome (online), IT</p> <ul style="list-style-type: none"> • Talk: <i>'Letter network to test theory'</i>. • Access talk at https://www.sg.ethz.ch/team/ramona_roller/data/2020-09-11_Rome.pdf
03/2020	<p>Digital Humanities im deutschsprachigen Raum Paderborn, DE</p> <ul style="list-style-type: none"> • Talk: <i>'Wie steuert geografische Distanz das Briefkorrespondenznetzwerk der Reformatoren? Eine Netzwerkanalyse'</i>. • Access talk at https://www.sg.ethz.ch/team/ramona_roller/data/2020-03-05_Paderborn.pdf
09/2019	<p>European Conference on Social Network Analysis (EUSN) Zurich, CH</p> <ul style="list-style-type: none"> • Talk: <i>'Statistical inference for letter network of Reformation'</i>. • Access talk at https://www.sg.ethz.ch/team/ramona_roller/data/2019-09-11_Zurich.pdf
07/2019	<p>International Conference on Computational Social Science (IC²S²) Amsterdam, NL</p> <ul style="list-style-type: none"> • Talk: <i>'Network regression reveals factors driving the letter correspondence of 16th century reformers'</i>. • Access talk at https://www.sg.ethz.ch/team/ramona_roller/data/2019-07-18_Amsterdam.pdf
06/2019	<p>Research visit at Austrian Centre for Digital Humanities Vienna, AU</p> <ul style="list-style-type: none"> • <i>Enlarged skills on vectorisation of raster maps and management of spatial data.</i> • Talk: <i>'A workflow for automated vectorisation of raster maps'</i>. • Access talk at https://www.sg.ethz.ch/team/ramona_roller/data/2019-06-17_Vienna.pdf
01/2019	<p>Research Visit at Heidelberg Academy of Sciences and Humanities Heidelberg, DE</p> <ul style="list-style-type: none"> • Talk: <i>'Das Briefkorrespondenznetzwerk der Reformatoren'</i>. • Access talk at https://www.sg.ethz.ch/team/ramona_roller/data/2019-01-21_Heidelberg.pdf

Organisation of scientific events

since 01/2021

Co-organiser of the workshop 'Opportunities in computerised analyses of historical letter correspondences' Heidelberg, GER

- *Teamed-up with project 'Theologenbriefwechsel im Südwesten des Reichs in der Frühen Neuzeit (1550-1620) led by Prof. Strohm in Heidelberg.*

- *Organised talks, discussion groups and accomodations for 30 participants.*

- *Speakers include international researchers from the humanities, computer- and data sciences.*

- *Planned date: Spring 2022*

06/2018

Co-organiser and participant at Big Data in the Field Weekend Seminar Berlin, GER

- *Organised talks, workshops, discussion rounds, and accommo-
dation for 50 participants and 6 speakers.*

- *Speakers included German Data Science professors and repre-
sentatives of German companies that apply Big Data-based tech-
nologies.*

Awards

09/2020

Student grant for NetSci conference

01/2020

Travel grant for DHd conference (Digital Humanities im deutschsprachigen Raum)

02/2012 - 12/2017

Member of German National Academic Foundation

07/2014

Stuart Sutherland Prize for an outstanding undergraduate dis-
sertation in psychology at the University of Sussex