

# Joe Roe

I am a computational archaeologist specialising in Southwest Asian prehistory. I use data science to study [human ecology and cultural evolution in past societies](#); develop [research software](#) and [open datasets](#) for reproducible quantitative analysis in archaeology; and direct [field surveys](#) using digital recording and geoinformatics technology.

View this CV online with links at [\\_https://joeroe.io/cv\\_](https://joeroe.io/cv_)

## Education

- current  
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2013
- **MPhil/PhD in Archaeology**  
UCL Institute of Archaeology 📍 University College London
    - Thesis: [Modelling prehistoric hunting strategies in Jordan](#)
    - Supervisors: [Dr. Louise Martin](#), [Prof. Andrew Bevan](#), [Dr. Andrew Garrard](#)
    - Part of the [Prehistoric Hunting Strategies in Jordan project](#)
- 2013  
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2012
- **MA Archaeology (Distinction)**  
UCL Institute of Archaeology 📍 University College London
    - Dissertation: *Cultural phylogeny of kurgan burial mounds in the west Eurasian steppe*
    - Supervisor: [Prof. Stephen Shennan](#)
- 2011  
|  
2008
- **BA Anthropology & Archaeology (1st class hon.)**  
Departments of Anthropology & Archaeology 📍 Durham University
    - Dissertation: *Spatial analysis of intra-site surface collection data from a Cucuteni-Tripolye mega-site*
    - Supervisor: [Prof. John Chapman](#)
- 2008  
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2001
- **Secondary education**  
Woodkirk High School 📍 Leeds

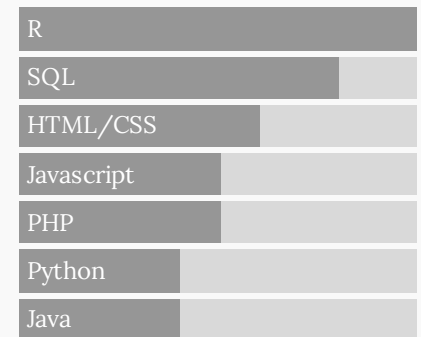
## Academic appointments

- current  
|  
2021
- **Research assistant**  
Institute of Archaeological Sciences 📍 University of Bern
    - SNF-funded [XRONOS project](#)

## Contact

✉ [joe@joeroe.io](mailto:joe@joeroe.io)  
☎ +45 60 56 37 63  
🔗 [joeroe.io](https://joeroe.io)  
☎ 0000-0002-1011-1244  
🎓 [Google Scholar](#)  
🐙 [github.com/joeroe](https://github.com/joeroe)  
🐦 [@joeroe90](#)  
💻 [User:Joe Roe](#)

## Programming



2020  
|  
2017

## Research assistant

CSEAS

📍 University of Copenhagen

- Collaborative research on early agricultural societies in Southwest Asia
- Responsibility for archaeological survey and spatial analysis components of the "Tracking Cultural and Environmental Change" project and Shubayqa Archaeological Project
- Developed databases and software interfaces for the group's research data, working with PostgreSQL/PostGIS, Javascript, and PHP
- Lecturer on Near Eastern Archaeology BA and MA programmes

## Publications

- Richter, T., Darabi, H., Alibaigi, S., Arranz-Otaegui, A., Bangsgaard, P., Khosravi, S., Maher, L., Mortensen, P., Pedersen, P., **Roe, J.**, & Yeomans, L., 2021. [The formation of Early Neolithic Communities in the Central Zagros: an 11,500 year old communal structure at Asiab](#). *Oxford Journal of Archaeology*, forthcoming.
- Khosravi, S., Pedersen, P. N., Alibaigi, S., **Roe, J.**, Heidary Dastenaee, M., Miladi, B., Darabi, H., Richter, T., & Mortensen, P., 2020. [Archaeological Landscape of Razavar Valley in the Neolithic Period: the survey of the 8th–6th millennium BC in the north of Kermanshah Province](#). [چشم انداز باستان شناختی دره رازآور در دوره] (in Persian). *Pazhoheshha-ye Bastan shenasi Iran*. doi:10.22084/NBSH.2020.21133.2094
- Martin, L., & **Roe, J.**, 2020. [The Kheshiya Cattle Skull Ring: Zooarchaeological Analyses](#). In McCriston, J., & Harrower, M. J. (eds.), *Landscape History of Hadramawt: The Roots of Agriculture in Southern Arabia (RASA) Project, 1998–2008*, pp. 275–348. Cotsen Institute of Archaeology Press. doi:10.2307/j.ctvzgb8n3.20
- Nebbia, M., & **Roe, J.**, 2020. [Landscape Studies](#). In Gaydarska, B. (eds.), *Early Urbanism in Europe: The Trypillia Mega-Sites of the Ukrainian Forest-Steppe*, pp. 60–107. De Gruyter. doi:10.1515/9783110664959-007
- Jones et al., 2019. [20,000 years of societal vulnerability and adaptation to climate change in southwest Asia](#). *WIREs Water* 6(2): e1330. doi:10.1002/wat2.1330
- Henton, E., **Roe, J.**, Martin, L., Garrard, A., Boles, O., Lewis, J., Thirlwall, M., & Jourdon, A-L., 2019. [Epipalaeolithic and Neolithic gazelle hunting in the Badia of north-east Jordan. Reconstruction of seasonal movements of herds by stable isotope and dental microwear analyses](#). *Levant* 50(2): 127–172. doi:10.1080/00758914.2019.1598764
- Arranz Otaegui, A., González Carretero, L., **Roe, J.**, & Richter, T., 2018. ["Founder crops" v. wild plants: Assessing the plant-based diet of the last hunter-gatherers in southwest Asia](#). *Quaternary Science Reviews* 186: 263–283. doi:10.1016/j.quascirev.2018.02.011
- Martin, L., Edwards, Y., **Roe, J.**, & Garrard, A., 2016. [Faunal turnover in the Azraq Basin, eastern Jordan 28,000 to 9,000 cal BP, signalling climate change and human impact](#). *Quaternary Research* 86(2): 200–219. doi:10.1016/j.yqres.2016.07.001
- Roe, J.**, 2016. [PIA at 25: A Retrospective](#). *Papers from the Institute of Archaeology* 25(2): p.Art. 16. doi:10.5334/pia.517
- Allentuck, A., Martin, L., & **Roe, J.**, 2015. [Refuse Disposal in the Early Epipalaeolithic? Preliminary Zooarchaeological Evidence from Kharaneh IV, Eastern Jordan](#). *Bulletin of the Council for British Research in the Levant* 10: 67–69. doi:10.1179/1752726015Z.00000000034
- Roe, J.**, 2014. [Review of \\*Green Arabia\\*: Human Prehistory at the Crossroads of Continents](#). *Papers from the Institute of Archaeology* 24(1). doi:10.5334/pia.458

My publications reflect a number of ongoing collaborations with domain-specialist colleagues, bringing a data science perspective to addressing multidisciplinary research questions in prehistory.



## Conference presentations

2021

- **Roe, J.**, *Out with the new, in with the old: recent advances in palaeoecological modelling with open data*. Presented at the Association for Environmental Archaeology Spring Meeting 2021: Open Science Practices in Environmental Archaeology, Oxford.
- **Roe, J.**, *A revised radiocarbon chronology of Ganj Dareh*. Presented at the 53rd Annual Meeting of the Canadian Archaeological Association, 'Ganj Dareh Then and Now: Integrating Past and Current Research'.
- Pedersen, P. N., **Roe, J.**, & Richter, T., *Free foragers? A case for transient social inequality at Epipalaeolithic Shubayqa, eastern Jordan*. Presented at the 12th International Congress on the Archaeology of the Ancient Near East, Bologna.
- **Roe, J.**, *On uncertain ground: modelling human palaeoecology in the Azraq basin, eastern Jordan, 24,000–8,000 BP*. Presented at the 12th International Congress on the Archaeology of the Ancient Near East, Bologna.

See my homepage for [abstracts](#) and [posters](#).

2019

- **Roe, J.**, *\*\*Gorram shiny!\* An accessible interface for reproducible landscape archaeology with R and fieldwalkr\**. Presented at Computer Applications & Quantitative Methods in Archaeology (CAA), Kraków.
- Richter, T., Arranz Otaegui, A., Jones, M., **Roe, J.**, & Yeomans, L., *Environmental Crisis and Societal Collapse: Was the Younger Dryas a significant factor in triggering the transition from the Palaeolithic to the Neolithic in the Levant?*. Presented at 'Culture in Crisis: Flows of Peoples, Artifacts and Ideas', the 14th International Conference on the History and Archaeology of Jordan (ICHAJ 14), Florence.
- Arranz-Otaegui, A., **Roe, J.**, Pantos, G. A., Santana, J., Araus-Cabrera, J. L., Le Roux, P., & Richter, T., *Locally available or imported? Identifying the provenance of Natufian plant food and fuel resources at Shubayqa 1 (northeastern Jordan)*. Presented at the 18th conference of the International Workgroup for Palaeoethnobotany (IWGP), Lecce.
- Buffington, A., Olson, K., **Roe, J.**, Al Kathiri, A. A., McCorriston, J., *Over Mountains and Through Woods: survey results and preliminary spatial analysis of the 2018 field season of the Ancient Socio-Ecological Systems in Oman (ASOM) project*. Presented at the 53rd Seminar for Arabian Studies, Leiden.
- **Roe, J.**, & Richter, T., *Mutable mobilities: 15,000 years of nomadic settlement in the Qa' Shubayqa, eastern Jordan*. Presented at the 53rd Seminar for Arabian Studies, Leiden.
- Pantos, G. A., & **Roe, J.**, *A halfway house: open source tools for tidy photographic and 3D data management between the field and the archive*. Presented at Computer Applications & Quantitative Methods in Archaeology (CAA), Kraków.
- **Roe, J.**, *The Q Continuum: open source GIS tools for paperless field survey*. Presented at Computer Applications & Quantitative Methods in Archaeology (CAA), Kraków.
- **Roe, J.**, Pedersen, P. N., Khosravi, S., *A survey of early prehistoric sites in the Razavar Valley (Kermanshah, Iran)*. Presented at the British Association for Near Eastern Archaeology (BANE) annual conference, Liverpool.

- 2018 ●
  - **Roe, J.**, *Is there anything R can't do?*. Presented at the Computer Applications and Quantitative Methods in Archaeology (CAA) conference, Tübingen.
  - **Roe, J.**, *fieldwalkr: an R package for spatial sampling and field survey simulation*. Presented at the Landscape Archaeology Conference (LAC), Newcastle & Durham.
  - Richter, T., Arranz-Otaegui, A., Boaretto, E., Jones, M., **Roe, J.**, & Yeomans, L., *Reconstructing Environmental Impacts on Late Pleistocene and Early Holocene Societies in the Marginal Zone of the southern Levant: A Case Study from Shubayqa*. Presented at the XVIII UISPP World Congress, Paris.
  - **Roe, J.**, *The Zagros in Prehistory: geography, chronology, demography*. Presented at the British Association for Near Eastern Archaeology (BANE) annual conference, Liverpool, 2019, and the KU Archaeology Day.
- 2017 ●
  - Martin, L. & **Roe, J.**, *The Complexities of Mammalian Body Size Change in Late Pleistocene to Holocene Southern Levant, 35 years on*. Presented at 'From the Mediterranean to the Atlantic: themes in European zooarchaeology', Museum of Natural History and Science, Lisbon.
- 2016 ●
  - **Roe, J.**, *A greener model of palaeoenvironments in the eastern Levant*. Presented at Unravelling the Palaeolithic, Southampton.
- 2015 ●
  - Allentuck, A., Martin, L., **Roe, J.**, *Domestic maintenance practices in the Early Epipalaeolithic of the Jordanian steppe*. Presented at the 12th International Symposium of the ICAZ Archaeozoology of Southwest Asia and Adjacent Areas Working Group (ASWA), Groningen.
  - **Roe, J.** & Martin, L., *Open season: modelling prehistoric wildlife dynamics in Epipalaeolithic and Neolithic Jordan*. Presented at the British Association for Near Eastern Archaeology (BANE) annual conference, London.
  - Allentuck, A., **Roe, J.**, Martin, L., Macdonald, D., & Maher, L., *Zooarchaeological evidence for domestic maintenance in the Early Epipalaeolithic*. Presented at the British Association for Near Eastern Archaeology (BANE) annual conference, London.



## Software & datasets










- 2020 ● [era: R package for years with an era](#)
- 2020 ● [rintchron: an R interface to IntChron](#)
- 2020 ● [evoarchdata: datasets from studies of cultural evolution in archaeology](#)
- 2019 ● [fieldwalkr: an R package for spatial sampling and survey simulation](#)
- 2019 ● [rpaleoclim: an R Interface to the PaleoClim Paleoclimate Database](#)

I am also an active contributor to a number of [other open source software](#) and [open data projects](#).

- 2019 ● [stratigraphr: an R package for archaeological stratigraphy and chronological sequences](#)
- 2019 ● [Data from Uerpmann 1987, The Ancient Distribution of Ungulate Mammals in the Middle East, TAVO A27](#)  
Zenodo
- 2019 ● [Trypillia mega-sites of the Ukraine](#)  
Archaeology Data Service



## Field projects

- 2019 ● **Co-director**  
[Shubayqa Archaeological Project](#)  Jordan
- 2018 ● **Field archaeologist**  
[Ancient Socioecological Systems in Oman \(ASOM\) project](#)  Oman
- 2018 ● **Supervisor**  
Razavar Valley Survey  Iran
- 2018  
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2015 ● **Field archaeologist & supervisor**  
Shubayqa Archaeological Project  Jordan
- 2015 ● **Field archaeologist**  
[Kharaneh IV Project](#)  Jordan
- 2014  
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2012 ● **Field archaeologist & supervisor**  
Tripillia Mega-Sites Project  Ukraine
- 2012 ● **Supervisor**  
Mirkovo Project  Bulgaria
- 2009 ● **Trainee**  
Tripillia Mega-Sites Project  Ukraine
- 2007 ● **Trainee**  
York Archaeological Trust  England

In the field, I specialise in site prospection, intrasite survey, digital recording and GIS.

I was responsible for the survey component Shubayqa Archaeological Project (2018–2019), including designing the research strategy, planning and obtaining permits, and directing teams on the ground.



## Grants & scholarships

- 2019 ● **Project grant**  
Danmarks Frie Forskningsfond
  - “Connecting the Dots: Reconfiguring the Indo-European family tree”
  - Named applicant. PI: Dr. Thomas Olander
- 2018 ● **Fieldwork grant**  
Det Danske Institut i Damaskus
  - 115,000 DKK to support archaeological fieldwork in eastern Jordan (2019)
  - Co-applicant with Dr. Tobias Richter
- 2018 ● **Fieldwork grant**  
H. P. Hjerl Hansen Mindefondet for Dansk Palæstinaforskning
  - 50,000 DKK to support archaeological fieldwork in eastern Jordan (2019)
  - Co-applicant with Dr. Tobias Richter
- 2016 ● **Project grant**  
C. L. Davids Fond og Samling
  - “Tracking Cultural and Environmental Change: the Epipalaeolithic and Neolithic in the Seimarreh Valley, central Zagros”
  - Named applicant. PIs: Prof. Peder Mortensen, Dr. Tobias Richter, Dr. Hojjat Darabi
- 2015 ● **Institute of Archaeology Award**  
UCL Institute of Archaeology  London
  - Individual grant (£1888) to participate in archaeological fieldwork in eastern Jordan
- 2014 ● **Research Students' Conference Grant**  
London Centre for the Ancient Near East (LCANE)
- 2013 ● **PhD Studentship**  
Leverhulme Trust
  - Part of Research Project Grant RPG-2013-223
- 2012 ● **Research-preparation Masters Award**  
Arts and Humanities Research Council



## Teaching & public engagement

Promoting computational tools, and especially R, in archaeology has been a particular focus; I have experience in teaching at a range of levels, as well as informally mentoring students and colleagues.

current  
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2018

### ● Course lecturer

Department of Cross-Cultural and Regional Studies

📍 University of Copenhagen

- BA: “Practical Archaeology 1” (Arkæologisk praksis 1, [HNAB0100FU](#)), “Practical Archaeology 2” (Arkæologisk praksis 2, [HNAB0102EU](#)), “Science and Theory of Science” (Videnskabsteori, [HTOR0102FU](#))
- KA: “Theory and Method in Near Eastern Archaeology” ([HNAK0101EU](#)), “Environments and landscapes in the archaeological record of southwest Asia” ([HNAB0102FU](#)), “Neolithic to Early Urban Periods in the Near East” ([HNAK0102EU](#)), “Project-based course” ([HNAK0100FU](#))

current  
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2020

### ● Instructor

“R for Archaeologists” winter school

📍 University of Pisa

2020

### ● Workshop organiser

Department of Cross-Cultural and Regional Studies

📍 University of Copenhagen

- Two-day workshop on mobile GIS for linguistic field research

2016  
|  
2015

### ● Postgraduate Teaching Assistant

UCL Institute of Archaeology

📍 University College London

- ARCL2028 Research & Presentation Skills

2016  
|  
2014

### ● Tutor

[The Brilliant Club](#)

📍 Schools in London

- Designed and delivered a university-style tutorial course for primary and high school students

2015

### ● Student Volunteer

Maths and Archaeology workshop

📍 Petrie Museum of Egyptian Archaeology

- Outreach event for high school students organised by Dr. Alice Stevenson (Petrie Museum) and Dr. Luciano Rila (UCL Mathematics) and supported by the London Mathematical Society



## Professional service

### ● Peer review

Journals

- *Advances in Archaeological Practice* (1)
- *Open Quaternary* (1)
- *PLOS ONE* (1)

### ● Peer review

Conferences

- CAA2020 (3)
- CAA2021 (7)

- 2019 ● **Session organiser**  
CAA2019 📍 Kraków  
• S06: *Recent advances in spatial statistics for archaeology*
- 2016 |  
2014 ● **Senior Editor**  
*Papers from the Institute of Archaeology* 📍 University College London
- 2016 |  
2014 ● **Postgraduate Student Representative**  
UCL Institute of Archaeology 📍 University College London  
• Communications Committee  
• Publications Committee
- 2014 |  
2013 ● **Editorial Assistant**  
*Papers from the Institute of Archaeology* 📍 University College London
- 2014 ● **Conference organiser**  
*Postgraduate Zooarchaeology Forum (PZAF)* 📍 London

## 📖 Professional memberships



- current |  
2020 ● **[Society of Research Software Engineering](#)**
- current |  
2014 ● **[Council for British Research in the Levant](#)**
- current |  
2014 ● **[Computer Applications and Quantitative Methods in Archaeology International](#)**  
• Member of Review College (2018–present)  
• Member of ‘Scientific Scripting Languages in Archaeology’ special interest group (2019–present)

I am especially active in CAA International and its [special interest group for scientific scripting languages](#).

## 🗣️ Workshop & seminar participation

- 2019 ● **“Scientific Scripting Languages in Archaeology” Roundtable**  
CAA2019 📍 Kraków
- 2018 ● **“Connecting the Dots”**  
International Summer School 📍 Christian-Albrecht University of Kiel  
• Development of the R package [moin: Modeling Interaction in Landscape Archaeology](#)



- 2017 ● **Shubayqa Project Workshop**  
Workshop  University of Copenhagen
- 2016 ● **Near East Climate Workshop**  
Workshop  University of Nottingham

## Other employment & volunteering

- current  
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2010 ● **Editor & administrator**  
English Wikipedia
  - Community-appointed administrator
  - Elected member of the Arbitration Committee (2019–2020)
- 2018 ● **Gateway Advisor**  
Kirklees Citizens Advice Bureau  Dewsbury
- 2012 ● **Curatorial assistant**  
Gradski Musej Vršac  Vršac
- 2012 ● **Software engineer**  
[TPP SystmOne](#)  Leeds
  - Front-end and data migration programming for a large clinical systems developer, working with Java and SQL

In my work with Wikipedia and other Wikimedia projects, I seek to promote engagement between academic archaeology and the free knowledge movement.