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_

Education

current 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 2012 MA Archaeology (Distinction)

UCL Institute of Archaeology

- **♥** University College London
- Dissertation: Cultural phylogeny of kurgan burial mounds in the west Eurasian
- Supervisor: Prof. Stephen Shennan

2011 2008 BA Anthropology & Archaeology (1st class hons.)

Departments of Anthropology & Archaeology

- Ourham University
- Dissertation: Spatial analysis of intra-site surface collection data from a Cucuteni-Tripolye mega-site
- Supervisor: Prof. John Chapman

2008 2001

Secondary education

Woodkirk High School

• Leeds

Academic appointments

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

Contact

- joe@joeroe.io
- **J** +45 60 56 37 63
- S joeroe.io
- **25** 0000-0002-1011-1244
- Google Scholar
- github.com/joeroe
- **y** @joeroe90
- W User:Joe Roe

Programming

R	
SQL	
HTML/CSS	
Javascript	
РНР	
Python	
Java	

Made with pagedown (source) Last updated 2021-04-22

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 Dastenaei, 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. [قسم انداز باستان شناختی درهٔ رازآور در دورهٔ] (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 McCorriston, 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

- 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.

• 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 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 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 (BANEA) annual conference, Liverpool.

• 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 (BANEA) annual conference, Liverpool, 2019, and the KU Archaeology Day.

See my homepage for abstracts and posters.

2019

2018

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.
 Roe, J., A greener model of palaeoenvironments in the eastern Levant. Presented at Unravelling the Palaeolithic, Southhampton.

• 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 (BANEA) 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 (BANEA) annual conference, London.

Software & datasets

2015

era: R package for years with an era
rintchron: an R interface to IntChron
evoarchdata: datasets from studies of cultural evolution in archaeology
fieldwalkr: an R package for spatial sampling and survey simulation
rpaleoclim: an R Interface to the PaleoClim Paleoclimate Database
stratigraphr: an R package for archaeological stratigraphy and chronological sequences

I am also an active contributor to a number of other open source software and open data projects.

Data from Uerpmann 1987, The Ancient Distribution of Ungulate Mammals in the Middle East, TAVO A27
Zenodo

Trypillia mega-sites of the Ukraine
Archaeology Data Service

Field projects

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.

2018	•	Field archaeologist & supervisor Shubayan Archaeological Project	n
2015		Shubayqa Archaeological Project V Jordan	11
2015		Field archaeologist Kharaneh IV Project ◆ Jordan	n
2014 2012		Field archaeologist & supervisor Tripillia Mega-Sites Project ♥ Ukraine	e
2012		Supervisor Mirkovo Project ♥ Bulgaria	a
2009		Trainee Tripillia Mega-Sites Project ♥ Ukraine	e
2007		Trainee York Archaeological Trust ◆ England	d
	\$==	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 • Individual grant (£1888) to participate in archaeological fieldwork in eastern Jordan	n
2014	•	Research Students' Conference Grant London Centre for the Ancient Near East (LCANE)	

PhD Studentship
Leverhulme Trust
• Part of Research Project Grant RPG-2013-223

Research-preparation Masters Award
Arts and Humanities Research Council

Teaching & public engagement

current | 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)

levels, as well as informally mentoring students and colleagues.

Promoting computational tools, and

experience in teaching at a range of

especially R, in archaeology has

been a particular focus; I have

current | 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

 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 memberships

current | 2020

current

2014

current

2014

Society of Research Software Engineering

Council for British Research in the Levant

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 "Scientific Scripting Languages in Archaeology" Roundtable 2019 **♀** Kraków CAA2019 "Connecting the Dots" 2018 **♀** Christian-Albrecht University of Kiel International Summer School • Development of the R package moin: Modeling Interaction in Landscape Archaeology Shubayqa Project Workshop 2017 **Q** University of Copenhagen Workshop **Near East Climate Workshop** 2016 **♀** University of Nottingham Workshop

Other employment & volunteering

current	•	Editor & administrator	
 2010		English Wikipedia	
2010		 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

 \bullet 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.