




# Mathias Bellat, Ph.D. candidate

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## Research interest

### Topics of interest

Archaeological sciences  
Geoarchaeology  
Machine Learning in Archaeology  
Micromorphology in archaeology  
Soil sciences in Archaeology

### Regions of interest

Kurdistan region, Iraq  
Southern Caucasus  
Yvelines, France  
Arabia




## Employment History

- 2021 – 2025    **PhD. Contract, Tübingen University, SFB1070, Tübingen, Germany.**  
PhD. on soil sciences and machine learning applications to archaeological field. Sides project on soil properties predictions based on FTIR.
- 2021    **Director of excavation, Monachus association, Rambouillet, France.**  
Direction of medieval excavation at the site of Prieuré des Moulineaux. Leading a team of 10-15 archaeologists and specialists.
- Internships at AgroParisTech, INRAP, Thiverval-Grignon, France**  
Micromorphology study under a microscope and thin section preparation process (Dir. Dr Cécilia Cammas).

## Education

- 2021 – Now    **Ph.D. Tübingen University, Tübingen, Geography department.**  
PhD. thesis under the direction of Prof. Thomas Scholten and Prof. Peter Pfälzner.
- 2019 – 2021    **M.Sc. Studies Of Ecology Biodiversity and Evolution, Museum National d'Histoire Naturelle, Paris, speciality Quaternary, Prehistory and Bioarchaeology .**  
Thesis title: *"The micromorphology contribution to the study of construction technics and their diffusion during Neolithic, the case of Mentesh Tepe (Middle Kura valley, Azerbaijan)", under the direction of Dr. Cécilia Cammas, Dr. Emmanuel Baudouin and Simon Puaud.*
- 2021    **M.Sc. Near East Archaeology, Freie University, Berlin.**  
Erasmus in Vorderasiatische department under the supervision of Prof. Reinhard Bernbeck.
- 2016 – 2019    **B.Sc. Archaeology and Art History, Sorbonne Université, Paris.**  
  
**B.Sc. Geography, Sorbonne Université, Paris.**

## Skills


Languages	<b>French</b>	C2	Mother tongue
	<b>English</b>	C2	● ● ● ●
	<b>German</b>	B2-C1	● ● ● ○
Software	Adobe Illustrator, Microsoft Suite, Adobe Photoshop, Adobe Indesign, Agisoft Metashape, QGIS, ArcGisPRO, Cloud Compare.		
Coding		● ● ● ●	
		● ● ● ●	
		● ● ● ○	
	<b>SQL</b>	● ● ○ ○	

## Teachings


2023–2024	<b>GEO77</b> , <i>University Tübingen</i> , Master introduction to R application in geography. Basic R, statistics, graphics representation and digital soil mapping (DSM). <i>Université de Perpignan</i> , Master supervision in archeology department.
2023	<b>GEO25</b> , <i>University Tübingen</i> , Bachelor introduction to statistics and R processing for geo-sciences. <i>Panthéon Sorbonne University</i> , Master supervision in archeology department, Anaëlle Genneret. <i>Application de la méthode HBIM en archéologie: étude de cas du prieuré des Moulineaux dans les Yvelines</i> . <i>OMEA laboratory, Lyon University</i> , Formation to thin sections production.
2021	<i>Routes de l'Orient</i> , G.I.S formation (ArcMap and QGIS) apply to archaeology.

## Research Publications

### Journal Articles

- 1 M. Bellat, E. Baudouin, C. Cammas, and B. Lyonnet, “New insights into the Neolithic architecture of the Southern Caucasus: A micromorphological case-study from Mentesh Tepe (middle Kura Valley, Azerbaijan),” en, *Journal of Archaeological Science: Reports*, vol. 49, Jun. 2023, ISSN: 2352409X.  DOI: 10.1016/j.jasrep.2023.103971.

### Reports

- 1 M. Bellat, E. Courné, F. Jeanpierre-Berraud, *et al.*, “Rapport annuel d’opération Fouille Programmée 2023 : Site des Moulineaux D’occupation religieuse au Moyen-âge à la transformation en bâtiment civil à la période Moderne,” Drac Île-de-France, Rapport annuel de fouille archéologique programmée, Jan. 2024, p. 222.  URL: <https://hal.science/hal-04423804> (visited on 05/04/2024).
- 2 M. Bellat, E. Courné, F. Jeanpierre Berraud, J. Foy, S. Fayet, and L.-A. Mathieu, “Rapport pluriannuel d’opération 2022 Fouilles Programmées 2019 - 2021 : Site des Moulineaux,” DRAC Ile-de-France, Paris, Rapport pluriannuel de fouille archéologique programmée, 2023, p. 203.
- 3 M. Bellat, E. Courné, F. Jeanpierre Berraud, M. Waszak, J. Foy, and S. Fayet, “Fouille Programmée 2021 : Site des Moulineaux. D’occupation religieuse au Moyen-âge à la transformation en bâtiment civil à la période Moderne,” DRAC Ile-de-France, Paris, Rapport annuel de fouille archéologique programmée, 2021, p. 203.

- 4 M. Bellat, E. Courné, M. Waszak, F. Jeanpierre Berraud, and I. Le Tellier-Heitz, "Fouille Programmée 2020 : Site des Moulineaux. D'occupation religieuse au Moyen-âge à la transformation en bâtiment civil à la période Moderne," DRAC Ile-de-France, Paris, Rapport annuel de fouille archéologique programmée, 2020, p. 187.
- 5 M. Bellat, E. Courné, M. Waszak, F. Jeanpierre Berraud, R. Devred, and A. Manière, "Poigny-la-Forêt 2019 Prieuré des Moulineaux," DRAC Ile-de-France, Paris, Rapport de sondage archéologique, 2019, p. 87.

## Conference Contributions and Proceedings

- 2024 **Bellat, M.**, Scholten, T. : "Standardisation in the area of big data: example of automated features detection in archaeology", *CAA 2024*, Auckland 8 - 12 April 2024, Session 7 *From trials and errors to triumphs: Machine Learning applications in archaeology* [Session organiser and talk].  
**Bellat, M.**, Taghizadeh-Mehrjardi, R., Scholten, T. : "Fail and try again: Return on topic modelling apply to archaeological scientific literature", *CAA 2024*, Auckland 8 - 12 April 2024, Session 7 *From trials and errors to triumphs: Machine Learning applications in archaeology* [Session organiser and poster].
- 2023 **Bellat, M.**, Baudouin, E., Cammas C. : "Regards croisés sur l'occupation d'un bâtiment néolithique dans le sud Caucase : observations de terrains et étude micromorphologique à Mentesh Tepe (Azerbaïdjan)", *Lire le sol en archéologie : pratiques de terrain et regards croisés*, Tours 29 November - 1 December 2023 [Talk].  
**Bellat, M.**, Litzenberg, R., Rebentish A., Conard, A., Floss, H., Scholten, T. : "ResourceCultures a new tool for understanding the development and expansion of resource uses and access through time", *29th EAA Annual Meeting*, Belfast 30 August - 2 September 2023, Session 560 *Investigating past human mobilities through natural resources exploitation: latest results and developments* [Session co-chair and talk].  
**Bellat, M.**, Glissmann, B., Taghizadeh, R., Rentschler, T., Sconzo, P., Pfälzner, P., Scholten, T. : "From site observation to regional interpretation, the influence of multi-scalar approach on soil properties and their archaeological implication: Kurdistan (Iraq)", *XXI INQUA Congress 2023*, Rome 13 - 20 July 2023 [Talk].  
**Bellat, M.**, Glissmann, B., Taghizadeh, R., Rentschler, T., Sconzo, P., Pfälzner, P., Scholten, T. : "Can soil information add value for the archaeological predictive model?", *ICAANE 2023*, Copenhagen 22 - 26 May 2023 [Talk].  
**Bellat, M.**, Glissmann, B., Taghizadeh, R., Rentschler, T., Sconzo, P., Pfälzner, P., Scholten, T. : "Spatial soil information as a proxy for archaeological predictive modelling in arid regions: the Selevani plain example (Kurdistan, Iraq)", *CAA 2023*, Amsterdam 03 - 06 April 2023 [Poster]
- 2022 **Bellat, M.**, Glissmann, B., Rentschler, T., Schmidt, K., Sconzo, P., Pfälzner, P., Scholten, T. : "Unraveling archaeological settlement, landscape, and resource use patterns with machine learning in Kurdistan (Iraq)", *EGU 2022*, Vienna 23 - 27 May 2022 [Talk].  
**Bellat, M.**, Glissmann, B., Rentschler, T., Sconzo, P., Pfälzner, P., Scholten, T. (2022): "What does matter? Machine Learning models to define archaeological patterns of site occupations and resource use in Kurdistan (Iraq) through a diachronic approach", *Q13 International conference*, Strasbourg 14 - 18 Mars 2022 [Poster].
- 2021 **Bellat, M.**, Baudouin, E., Cammas, C. : "A Matter of Scale! Field Observations and Micromorphological Analyses on Earthen Materials at Mentesh Tepe (Azerbaijan) in the Neolithic Period", *EAA 2021*, Kiel 07 - 11 September 2021, Session 496, *A world of clay I* [Talk].

## Miscellaneous Experience

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### Field experience

since 2022	<b>Bassetki project</b> , Kurdistan Iraq, soil survey, archaeological excavation (Bronze Age).
2019 – 2024	<b>Prieuré des Moulineaux</b> , Yvelines, France, direction of archaeological excavation (Medieval and Modern)
2021 – 2022	<b>Qaraçinar</b> , Kura Valley, Azerbaijan, archaeological excavation (Bronze Age and Iron Age)
2021	<b>Kütltepe</b> , Nakichevan, Azerbaijan, archaeological excavation and survey (Neolithic)
2019	<b>Dinard</b> , Brittany, France, coastal geography survey class <b>Agros</b> , Peloponnese, Greece, geoarchaeological prospection class
2018	<b>Auriasio</b> , Vaucluse, France, archaeological excavation (Iron Age) <b>Murviel-Lèz-Montpellier</b> , Hérault, France, archaeological excavation (Iron Age)
2017 – 2018	<b>Bessan</b> , Hérault, France, archaeological excavation (Bronze Age and Iron Age)
2017	<b>Olonzac</b> , Aude, France, archaeological excavation (Iron Age)

### Membership

CAA Computer Applications and Quantitative Methods in Archaeology

CAA France Computer Applications and Quantitative Methods in Archaeology in France [Central office since 2024].

AFEQ Association Française pour l'Etude du Quaternaire

INQUA International Union for Quaternary Research

EAA European Association of Archaeologists