



ADMISSION TO DOCTORAL STUDIES

Session September 2025

Field of doctoral studies: COMPUTERS AND INFORMATION TECHNOLOGY

Doctoral supervisor: POPOVICI DORIN-MIRCEA

TOPICS FOR THE ADMISSION TO DOCTORAL STUDIES

TOPIC 1: *Challenges of digitizing intangible cultural heritage*

Content / Main aspects to be considered:

- Statement/justification/SOA, objectives, methodology, available technology, expected output, timeline (Gantt diagram)

Recommended bibliography:

- Boboc RG, Băutu E, Gîrbacia F, Popovici N, Popovici DM. Augmented reality in cultural heritage: an overview of the last decade of applications. *Applied Sciences*. 2022 Sep 30;12(19):9859.
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- Neamţu C, Comes R, Popovici DM, Băutu E, Liliana MS, Syrotnik A, Popovici MI. Evaluating user experience in the context of cultural heritage dissemination using extended reality: A case study of the dacian bronze matrix with hollow design. *ACM Journal on Computing and Cultural Heritage*. 2024 Feb 23;17(2):1-21.
- Hou Y, Kenderdine S, Picca D, Egloff M, Adamou A. Digitizing intangible cultural heritage embodied: State of the art. *Journal on Computing and Cultural Heritage (JOCCH)*. 2022 Sep 16;15(3):1-20.
- Doulamis N, Doulamis A, Ioannidis C, Klein M, Ioannides M. Modelling of static and moving objects: digitizing tangible and intangible cultural heritage. *Mixed reality and gamification for cultural heritage*. 2017:567-89.
- Erturk N. Preservation of digitized intangible cultural heritage in museum storage. *Milli Folklor*. 2020 Dec 1;16(128):100-10.
- Hariri A. Digitalization of intangible cultural heritage (ICH) archives as legal protection of intellectual property rights. *Khizanah al-Hikmah: Jurnal Ilmu Perpustakaan, Informasi, dan Kearsipan*. 2021 Dec 4;9(2):145-56.
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- Marcondes CH. Cultural Heritage Objects: a model of the patrimonialization process.
- Rei, L., Mladenic, D., Dorozynski, M. et al. Multimodal metadata assignment for cultural heritage artifacts. *Multimedia Systems* 29, 847–869 (2023).
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- Grieves M, Vickers J. Digital twin: Mitigating unpredictable, undesirable emergent behavior in complex systems. InTransdisciplinary perspectives on complex systems: New findings and approaches 2016 Aug 17 (pp. 85-113). Cham: Springer International Publishing.
- Gabellone F. Digital Twin: a new perspective for cultural heritage management and fruition. Acta Imeko. 2022 Mar 31;11(1):7-pp.
- El Saddik A, editor. Digital Twin for Healthcare: Design, Challenges, and Solutions. Elsevier; 2022 Nov 21.
- Fuller A, Fan Z, Day C, Barlow C. Digital twin: enabling technologies, challenges and open research. IEEE access. 2020 May 28;8:108952-71.
- Vohra M, editor. Digital twin technology: fundamentals and applications. John Wiley & Sons; 2023 Feb 1.
- Vuoto A, Funari MF, Lourenço PB. Shaping digital twin concept for built cultural heritage conservation: a systematic literature review. International Journal of Architectural Heritage. 2024 Nov 1;18(11):1762-95.
- Montusiewicz J, Barszcz M, Korga S. Preparation of 3D models of cultural heritage objects to be recognised by touch by the blind—case studies. Applied Sciences. 2022 Nov 22;12(23):11910.
- González-Pérez C, Parcero-Oubiña C. A conceptual model for cultural heritage definition and motivation. InRevive the past: Proceeding of the 39th conference on computer applications and quantitative methods in archaeology 2011 Apr (pp. 234-244). Beijing: Amsterdam University Press.

Prerequisites / Remarks: *NA*

Doctoral supervisor,

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Signature

Coordinator of the field of doctoral studies,

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