Department	School of Computing
Supervisors	Babis Koniaris, Kenny Mitchell
Project Title	Capture and Contextualisation of Cultural Heritage Data

PROJECT DESCRIPTION

Museum artifact digitization is typically limited to using specific equipment for capture, or to the duration of funded digitization projects and tied to particular institutions. There is a focus on individual capture, but artifacts are rarely contextualised further, utilising interactive media, such as interactive displays, VR/AR [3].

This PhD aims to study current approaches in low-cost capture of digital artifacts, and their contextualisation in interactive media experiences, co-located to institutions or otherwise. The outcome of the study can inform the development of a widely accessible, non-intrusive low-cost capture approach. The captured artifacts generated by such an approach should be recorded in a form suitable for re-use in interactive media. A subsequent outcome of the PhD is the development of tools to assist contextualisation in interactive media for different existing UX approaches.

Prospective applicants are encouraged to contact the Supervisor before submitting their applications. Applications should make it clear the project you are applying for and the name of the supervisors.

Academic qualifications

A first degree (at least a 2.1) ideally in Computer Science with a good fundamental knowledge of computer graphics and/or high-performance computing.

English language requirement

IELTS score must be at least 6.5 (with not less than 6.0 in each of the four components). Other, equivalent qualifications will be accepted. Full details of the University's policy are available online.

Essential attributes:

- Experience of fundamental computer graphics
- Competent in programming and optimisation
- Knowledge of real-time application development
- Good written and oral communication skills
- Strong motivation, with evidence of independent research skills relevant to the project
- Good time management

Desirable attributes:

Programming experience in C/C++ or C#, and shader or compute languages.
Good knowledge of linear algebra.

Indicative Bibliography	[1] Guidi, G., Gonizzi Barsanti, S., Micoli, L. L., & Russo, M. (2015). Massive 3D digitization of museum contents. In *Built heritage: Monitoring conservation management* (pp. 335-346). Springer, Cham. [2] Farella, E. M., et al. "Handling critical aspects in massive photogrammetric digitization of museum assets." *The International Archives of Photogrammetry, Remote Sensing and Spatial Information Sciences* 46 (2022): 215-222.

	[3] Nikolakopoulou, Vasiliki, and Panayiotis Koutsabasis. "Methods and practices for assessing the user experience of interactive systems for cultural heritage." *Applying Innovative Technologies in Heritage Science*. IGI Global, 2020. 171-208.
Enquiries	For informal enquiries about this PhD project, please contact Dr Babis Koniaris (b.koniaris@napier.ac.uk)
Web page	https://www.napier.ac.uk/research-and-innovation/research-degrees/application-process