School of Computing, Engineering, and the Built Environment
Edinburgh Napier University

PHD STUDENT PROJECT

Application instructions:
Detailed instructions are available at :
https://www.napier.ac.uk/research-and-innovation/doctoral-college/how-to-apply

Prospective candidates are encouraged to contact the Director of Studies (see details below) to discuss the project and their suitability for it.

Project details

Supervisory Team:
- Director of Study: Dr Temidayo Osunsanmi (Email: t.osunsanmi@napier.ac.uk)
- 2ND SUPERVISOR: Dr Dubem Ikediashi

Subject Group: Built Environment

Research Areas: Architecture, Building & Planning

Project Title: A Unified Model for Incorporating Metaverse Technologies into Maintenance Management Processes

Project description:
The advent of the Fourth Industrial Revolution has brought significant advancements in technology, including the rise of the metaverse a digital universe that integrates extended reality, blockchain and Web 3.0 to create immersive, interactive experiences. While the metaverse has primarily been associated with gaming and social interactions, its potential applications extend far beyond entertainment, particularly in industries like real estate and facility management.

Maintenance management is the process of planning, scheduling, and overseeing maintenance activities to ensure that equipment, facilities, and assets remain in optimal working condition. Traditional maintenance management processes often face challenges related to communication, training, and real-time problem-solving. The Metaverse, as an immersive digital space, promises to address these challenges by providing virtual environments where maintenance activities can be simulated, visualized, and managed more effectively. Thus, the Integration of metaverse

technologies can revolutionize maintenance management by providing a virtual platform for real-time interaction, data analysis, and decision-making. Previous studies have highlighted the potential benefits of these technologies, but a comprehensive, unified model that consolidates these advancements into a cohesive maintenance management framework is still lacking.

Candidate characteristics

Education:

Minimum 2:1 degree in the following subject areas: Real Estate Surveying, Construction Management, Computer Science, Quantity Surveying

Subject knowledge:

Real Estate Surveying, Construction Management, Computer Science, Quantity Surveying

Essential attributes:

- Competent in the use of Statistical Software
- Publication record in reputable journals
- High standards of verbal and written English communication with strong interpersonal skills
- Excellent time management skills