
***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 Cletus Moobela (Email: c.moobela@napier.ac.uk)
- 2ND SUPERVISOR: Dr Temidayo Osunsanmi

**Subject Group:** Built Environment

**Research Areas:** Built Environment, Artificial Intelligence, Surveying

**Project Title:** Challenges and opportunities of Artificial Intelligence (AI) in the real estate services sector

**Project description:**
Technological advancements have seen exponential growth in many sectors of the world's economies and people's lifestyles over the last century. It is difficult to think of any industry that has not embraced technological developments in a diversity of applications. Artificial Intelligence (AI), particularly generative AI, has taken centre stage in these transformative pressures and opportunities over the recent past, at a speed that has left many industry participants still hanging in the valley of indecision and dilemma on whether and how to adapt to change.

While some industries have been swift in terms of adapting to these catalytic exigencies of technology, others have clearly been sluggish. The real estate services sector is perhaps one such industry that has tended to be relatively stuck in the traditional modus operandi. Many real estate services are heavily reliant on human agency to process information for effective decision-making in an environment that has customarily been characterised by thin market information sources. In this perspective,

generative AI, which is defined in terms of technological tools that can create content based on a vast amount of data it has been taught, presents real challenges and opportunities for the human agency model. Both the amount of information and the speed at which the technology can process is millions of times superior to that of a human.

The dawn of AI has inevitably brought with it a vast array of potential changes in the real estate services sector, including in the areas of automated valuation models (AVMs), automated customer service enquiries, scheduling property viewings, efficient property management, to name a few. The flipside equally brings several challenges that the industry will have to grapple with for years to come, including data security issues, possible workforce displacements, smart maintenance management, tenant screening, training needs and the associated costs, etc. Striking a balance between these challenges and opportunities demands proficient and robust theoretical frameworks anchored on natural adaptations to change. Although not entirely exclusive, a complex adaptive systems view of responding to change, is being proposed in this piece of research.

Research proposals are therefore invited that will involve deep understanding of the nature of the challenges posed by AI and how the technology can be harnessed without violating the very foundation principles and practices upon which the real estate profession is anchored.

## Candidate characteristics

**Education:**

Minimum 2:1 degree in the following subject areas - Geography, urban planning, real estate, urban studies

**Subject knowledge:**

A built environment related subject

**Essential attributes:**

- Ability to conduct independent research
- Good analytical skills
- Good problem-solving skills
- Knowledge of research methods and tools
- Good written and oral communication skills

**Desirable attributes:**

- Knowledge of AI and machine learning