**Research Aim:**

The aim of this research is to explore Procedural Content Generation (PCG) techniques in game development, evaluating their impact on game design efficiency, player engagement, and content diversity. The study will investigate various algorithms used in PCG, the challenges of maintaining quality control, and potential advancements in AI-driven procedural generation. The study will differ handcrafted content from PCG generation.

**Research Hypothesis:**

Procedural Content Generation (PCG) enhances game design efficiency and player engagement by generating dynamic, varied content, but its effectiveness is influenced by algorithmic complexity, quality control, and player perception.

**Research Questions:**

1. What are the most used PCG techniques, and how do they affect game design and development efficiency?
2. How does PCG impact player experience, engagement, and replayability across different game genres?
3. What are the key challenges of implementing PCG, and how can developers address issues like quality control and coherence in procedurally generated content?

**Inspirational Sources:**

* Last year, I studied Procedural Content Generation (PCG) as a subject and found it highly engaging. I particularly enjoyed working on my home assignment, where I implemented PCG techniques to generate game content. This experience inspired me to explore PCG further in my research.
* Adaptive Procedural Generation in Minecraft: <http://cis.temple.edu/~wangp/5603-AI/Project/2022S/pattersonblaker/Ward_Patterson_Final_Report.pdf>
* Procedural Content Generation in Games:

<https://link.springer.com/book/10.1007/978-3-319-42716-4>