UNIVERSITY OF SRI JAYEWARDENEPURA

Faculty of Technology

Department of Information and Communication Technology

ITS4202- Emerging Technologies

<u>Assignment -III (Group Assignment)</u>

AI-Assisted for Gap Identification

Deadline: 14th of February 2025

Prompt engineering plays a crucial role in extracting meaningful insights and identifying research gaps from multiple journal papers. **A well-crafted prompt ensures that AI-generated responses are structured, relevant, and insightful**. Here's an example for prompt engineering is essential for this task.

- *"Summarize these three journal papers."* (Too broad, lacks focus)
- *"Compare the methodologies, key findings, and limitations of these three papers. Identify contradictions and propose a research gap."* (Structured & focused)

.

1. Select same three (3) journal papers which were used in the Assignment II.

2. Requirement is identifying the Research Gaps
   - Compare the findings across the three papers.
   - Discuss missing elements, unexplored areas, or opportunities for further study
3. Use both of **AI-Assisted tool given bellow separately.**
   - chatGPT
   - deepseek
4. You can select the abstract, part of the introduction/background/literature review, results and discussion, or conclusion. It is also possible to select a combination of these subsections.
   e.g.
   - Abstract, part of literature review, conclusion
   - Abstract, part of introduction, result and discussion, conclusion
   - Or, you can select all sub sections
   -

5. Consider following instruction to make the effective prompt when giving subsections mentioned above.
   a. **Clearly Define the Role**
      o Specify the role you want the AI to assume (e.g., a researcher, professor, industry expert, or scientist).
      o Mention the field of expertise (e.g., artificial intelligence, environmental science, healthcare, etc.).
      o Provide context about the level of expertise (e.g., "a leading expert in renewable energy" or "a researcher with 10 years of experience in machine learning").

   b. **Provide Context and Background**
      o Give the AI enough context about the topic or problem you want it to address.
      o Include details such as the scope of the research, the time frame, or specific challenges in the field.
   c. **Ask for Specific Outputs**
      o Clearly state what you want the AI to produce (e.g., a critique, a list of research gaps, a literature review, or recommendations).
      o Specify the format (e.g., bullet points, a detailed report, or a summary).
   d. **Encourage Critical Thinking**
      o Ask the AI to critically evaluate existing research, identify contradictions, or propose innovative solutions.
      o Encourage it to think like an expert by questioning assumptions and exploring alternative perspectives.

6. Write down the all steps/ concern points followed in instruction 3 ,4 and 5 that you are used to make the prompt. (need complete prompt/s)
7. Then, create the report, by comparing the outputs (identifying the research gap) obtained from two tools mentioned in 3.
8. Upload the above two filles (question 6 and 7) in to the LMS.

***** END *****