Assignment #2

Total Points: 100

Office location: CAED 210H

Instructions

Collaboration Policy: For "Individual assignments," Collaboration is expected within the limits of discussing concepts and problems. However, each student must produce his/her own solution to the problems. For "Group assignments," each student should have specific contributions to the homework –by default, the instructor assumes equal contributions; if any disagreement between team members about the contributions of individuals, please talk to the instructor to initiate a peer evaluation process.

ChatGPT Policy: In general, please be transparent if you use ChatGPT and highlight the parts of the homework generated by ChatGPT. When you choose to use ChatGPT to provide some answers, please *1) use an online document to save the ChatGPT sessions that helped you produce the answer*; *2) critically review the answers generated by ChatGPT, highlight the parts that you found that ChatGPT's answer needs improvements*.

General Expectations and Requirements for Homework:
- Please use considerable and uniform font sizes throughout the document to maintain consistency of the document. You may choose to highlight subheadings with either a bold or underlined feature.
- Please use bullet points wherever possible to make the answers clear and easy to follow by an educated reader.
- Please do not forget to reference additional data, hyperlinks or literature used as evidence or background information to support your claims and solutions in the document. Please list those references below your answer or at the end of the document.
- Please refer to the textbook and provide descriptive answers wherever possible.
- Please communicate with the instructor to clarify questions about the homework description BEFORE the submission; after the homework submission deadline, the students are responsible for the point losses due to different ways of interpreting the homework requirements.

All homework submissions should be submitted electronically on Canvas.

Student Name:_____

ID: _____

Choose a specific data sensing technology, discussed in the lecture (e.g., IoT, drones, LiDAR, robotics, thermal imaging) or another relevant technology of your choice, and analyze its applications, challenges, and future potential in the Architecture, Engineering, and Construction (AEC) industry.

- **Introduction (15 points):**
    - Define the chosen technology and its relevance to the topic.
    - Clearly state the purpose of your analysis, explaining its importance for data monitoring in architecture, construction, or environmental contexts with supporting literature.
- **Technology Overview (10 points):**
    - Explain how the technology works, including key components and processes.
    - Provide technical details and diagrams (if applicable) to enhance understanding.
- **Applications (20 points):**
    - Present two case studies that showcase the technology in action.
    - Discuss the benefits demonstrated in each case study (e.g., cost savings, improved safety, enhanced efficiency).
- **Challenges (15 points):**
    - Identify barriers to adoption (e.g., cost, technical complexity, data security).
    - Use real-world examples to illustrate these challenges.
- **Proposed Solutions (15 points):**
    - Discuss strategies to address the challenges identified.
    - Reference current research or industry practices.
- **Future Trends (15 points):**
    - Predict how this technology might evolve in the next 5-10 years.
    - Discuss its potential impact on the architecture, construction, or environmental sectors.
- **Conclusion (10 points):**
    - Summarize key findings and your perspective on the technology's role in advancing the industry.

Please adhere to academic standards. Directly copying from other sources without proper citations will be considered plagiarism!

Your submission should be structured, well-supported by literature, and demonstrate critical thinking.

<u>Final Question:</u> (0 points)
How much time did it take you to finish this assignment? Please specify the number of hours.

Good Luck!!