PARTS OF A SCIENTIFIC PAPER

1. Abstract
   - **Purpose:** Quickly tell the reader what your paper is about and why it is important
   - **Structure:**
     - Introduce the specific problem addressed
     - Briefly explain the techniques used
     - Share your key takeaways
       - What were the most interesting results?
       - How did you improve the field?
   - Keep it short! (~250 words) They can read the paper for more information!

2. Introduction
   - **Purpose:** Familiarize the reader with the topic and what gap exists in the field
   - **Structure:**
     - Explain the high level problem addressed
     - Describe why current approaches aren’t good enough
     - Provide an overview of the paper’s structure
     - Imagine this is being read by an undergraduate in your field! Readers should be able to connect with the fundamental motivation, even if they may not understand the technique

3. Literature Review
   - **Purpose:** Provide a detailed analysis of similar work in the field and how your work is unique
   - **Structure:**
     - Explain the technique of other works similar to yours
     - How have you built upon existing work?
     - Are there ways these other works are not sufficient for your application?
     - You can group similar techniques or applications together in the same paragraph, the structure can be more freeform

4. Methods
   - **Purpose:** Explain how to produce your results
   - **Structure:**
     - Optional: Preliminaries, which describes key notation used throughout the paper
     - Explain the technique you have created or reference what existing techniques you relied on. Readers should be able to replicate your method from this description.
     - Diagrams and pseudo code are very useful to explain how different parts of your model/experimental setup interact with one another

5. Results
   - **Purpose:** Demonstrate your results and why they are significant for your field
   - **Structure:**
     - Explain each result you have, and how to interpret the associated tables or figures.
     - For each result, explain its key implications.
     - Make sure that your figures and tables are clearly labeled and easy to understand!

6. Conclusion
   - **Purpose:** Summarize the methodology you used to generate results and your key findings
   - **Structure:**
     - Provide a brief summary of your methods section, what you evaluated in your results section, and your key takeaways from these results
     - Mention areas of future work; these can be limitations of your current work or it can be work you’re pursuing next

Questions? Feel free to book an appointment with the CommLab