CG1112 Workshop 2: Peer-Review, Answers & Explanations for W1, Clarity, Precision & Specificity

Part 1: Is the language plain?

- Are adjectives or adverbial phrases used only where needed?
- Are there any unnecessary/redundant pieces of information?

1. Locate redundant or repetitive information.
2. Omit non-essential, repetitive words and phrases.
3. Add transitional phrases/words or pronoun referents for coherence.
4. Take care not to delete essential details during this process.

Text 1:

The Large Unmanned Ground Vehicle (LUGV) is a semi-autonomous robot that was designed and developed to provide the necessary aid to humans during severe and dangerous disaster situations.
The LUGV performs so efficiently during disaster situations. It's goliath-like strength is strong enough to lift up huge amounts of rubble of up to almost 250 kg in order to clear the pathways and also can excavate the fallen earth during earthquakes for survivors.

Step 1: **Text 1** with redundancies highlighted

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Step 2: Revision requires some rewriting: In this case replace words (can) and create parallel structures (to) during the revision process.

Revised **Text 1** with words replaced (can) and parallel structures created (to)

The Large Unmanned Ground Vehicle (LUGV) is a semi-autonomous robot that was developed to provide aid during disasters.
The LUGV **can** lift up to 250 kg of rubble to clear paths and **to** excavate for survivors.

Step 3: Revised **Text 1** with transitional words/referents used to avoid repetition and link to preceding sentence.

The Large Unmanned Ground Vehicle (LUGV) is a semi-autonomous robot that was developed to provide aid during disasters.
~~The LUGV~~ **It can** lift up to 250 kg of rubble to clear paths and **to** excavate for survivors.

Part 1: Is the language plain?

- Are adjectives or adverbial phrases used only where needed?
- Are there any unnecessary/redundant pieces of information?
- **Why are the descriptive and emphatic words essential here?**

Text 2

Snake robots can now traverse non-flat fields, climb poles, swim underwater, and even rebuild themselves properly. They can access incredibly small spaces and transition between swimming to slithering to climbing without having to be reconfigured. Advancing far beyond slithering across flat ground, these amazing robots are nearly ready to begin tackling spaces in the field that no other robot can reach.

Text 2:

1.	Snake robots can now traverse non-flat fields, climb poles, swim underwater, and **even** rebuild themselves ~~**properly**~~.	The adverb ***even*** is an intensifier. Here, it highlights a unique function of the snake robot. The adverb properly is superfluous. It does not provide essential information. Nor does it emphasize an important point.
2.	They can access **incredibly** small spaces and transition between swimming to slithering to climbing without having to be reconfigured.	***Incredibly*** is another intensifier. The adverb highlights the snake robots superior capacity to access very small spaces (in comparison to other SAR robots that have the same function).
3.	**Advancing far beyond slithering across flat ground**, these ~~**amazing**~~ robots **are nearly ready** to begin tackling spaces in the field that ***no other robot can reach.***	This sentence provides no new information; it is included for emphasis. (To emphasize how the snake robot resolves a problem that is beyond the capacities of other robots.) Question: *What would happen if this sentence was omitted?*

Part 2: Are the explanations and descriptions complete?

- Are there any *gaps* of information in the explanations?

1. Remind yourself of the specific aim of the section you are reading.
2. Read and check your understanding of the explanations/descriptions.
3. If you do not understand, is it because some pieces of information are missing?
4. Ask specific questions about the section. Say what you are confused about.

Text 3

For military and search-and-rescue robots in particular, which are likely to be on unknown terrain, it is quite difficult to control all of their DOFs manually.

DOF: Degrees of Freedom

- The 'gaps' of information in **Text 3** relate to specific technical details.
- Including essential information for understanding the PROBLEM in this context helps to make this description more complete.

Text 3 (Revised)

For military and search-and-rescue robots in particular, which are likely to be **teleoperated** on an unknown **rough** terrain **with limited camera views**, it is quite difficult to control all of their DOFs manually.

DOF: Degrees of Freedom

Text 4

The robot moves and changes the configuration of the subtracks based on the surface information. Once the surface of the ground is deformed, the subtracks adapt quickly.

- The 'gaps' of information relate to sequential steps/processes in the functions of the robot.
- Omitting steps in the sequence confuses or misinforms the reader of the robot's functionalities.
- Editing such gaps involves thinking about the process in sequence and then 'filling in the gaps' of information.

Text 4 (Revised)

The robot moves **and detects the surface shape of the ground continuously**, and it changes the configuration of the subtracks based on the surface information. Once the surface of the ground is deformed **by the traversal of the robot**, the subtracks adapt quickly.

Text 5

Featuring 512 x 512 raster memory and 32-bit data points, major buss lines and interconnect stand out very clearly on the overall view of the entire chip.

- The 'gap' here is the missing Subject of the sentence.
- The underlined clause is known as a dangling modifier because it is not attached to a Subject.
- "major buss lines and interconnect" do not feature powerful memory and resolution. An entire system does. To correct a dangling modifier, add a Subject:

Text 5 (Revised)

The monitor features 512 by 512 raster memory and 32-bit data point precision, enabling **the user** to see easily interconnections and major bus lines when viewing the entire chip.

Part 3 *Precision*: Are the explanations and descriptions accurate?

Focus: Verb tense & prepositions.

1. Is the verb tense used consistent?
2. Is it clear when events occurred?
3. Are prepositions used accurately?

Text 6

Bioinspired jumping robots had good environmental adaptability and overcame obstacles that were several or even ten times larger than themselves. They are becoming a hotspot in research on bionic robots [1–5]. Many researchers are beginning to design various jumping robots that achieved good jumping performance by using creatures with jumping ability, such as kangaroos [6, 7], spiders [8], locusts [9], and froghoppers [10, 11], as research objects [12, 13].

If you spotted verb tense errors, how did these affect your understanding?

Text 6

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Text 7

Considering that lizards can control the swing on their tails for redirecting angular momentum at their bodies beyond their tails, thereby stabilizing the body posture of the sagittal plane, Libby et al. [30] designed a lizard-sized robot through an active tail, which can swing higher and lower on a plane. The tail on the robot swings up as the controller applies torque for stabilizing the body, thus keeping the body angle constant for proportion differential (PD) feedback control.

Text 7

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If you spotted preposition errors, how did these affect your understanding?

Text 7

Considering that lizards can control the swing **of** their tails **to redirect** angular momentum **from** their bodies **to** their tails, thereby stabilizing the body posture **on** the sagittal plane, Libby et al. [30] designed a lizard-sized robot **with** an active tail, which can swing **up and down** on a plane. The tail **of** the robot swings **upward** as the controller applies torque **to** stabilize the body, thus keeping the body angle constant **with** proportion differential (PD) feedback control.

Part 4 *Precision*: How do you avoid ambiguity?

An ambiguity is a word, phrase, or sentence that readers can interpret in more than one way.

1. **Use words that only have one meaning; avoid words with multiple meanings.**

   The technician wanted to reduce the vibration of the fan at the exhaust **as** the exhaust ducting was cracking.

Does the word **as** mean “while” or does it mean “because”? A reader could easily interpret the word either way.

2. Use pronoun referents ‘it’ and ‘this’ carefully.

   ×Because the receiver presented the radiometer with a high-flux environment, **it** was mounted in a silver-plated stainless steel container.

It refers to the *environment* (the pronoun always refers to the subject directly preceding it).

- But the writer cannot mean that the *environment* is mounted.
- The reader must then guess by looking at other parts of the report to determine if **it** refers to the receiver or the radiometer.

✓Because the receiver presented the radiometer with a high-flux environment, **the radiometer** was mounted in a silver-plated stainless steel container.

1. Examine sentences where **it** and **this** are used.
2. Read and check your understanding of the explanations/descriptions provided there.
3. If you cannot understand, is it because there are ambiguities?
4. Try, if you can, to suggest a revision.

Part 5 Specificity: Are exact details provided?

- Are exact details provided where possible?
- Is information deliberately vague (obfuscation)?

1. Locate long and complex sentences.
2. Are all the necessary technical information provided?
3. Are any of the words/phrases used subjective?
4. Are any of the descriptions repetitive or obvious?

Rule of thumb:

i. Provide exact details (quantify where possible).
ii. Avoid exaggerating or providing unnecessary information.

The example below is not given in Worksheet 1. It is provided here as an example.

The absorption coefficient of the fill material and covering of the modular walls must be high enough to suppress, by 38 dB, most of the ambient sounds normally produced, including noise emissions from typewriters, printers, and telephones.

Obvious and unnecessary: fill material and covering (because all walls have them).
Repetitive: noise emissions
Subjective: most; normally, noise
Technical inaccuracies:

- attenuation level should be specified in dB(A)
- Ratio of wall area to office space should be given so the attenuation levels make sense
- List of office equipment misleads: Human sounds are not considered 'noise'?

Revisions involve adding technical details and removing superfluous and repetitive details.

Fifty square feet of the modular walls must absorb at least
38 dB(A) of the emissions in a 36 cubic yard office space.