C951 Task 2

Alternative directions and FAQ

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*This document is an unofficial summary of the C951 task 2 directions and rubric. The advice here is based on our experience with student submissions. Though evaluators strive to be consistent, it is reasonable to expect some differences in decisions and comments. Similar documents for the other tasks can be found here:*

[*C951 task 1 FAQ, directions, and advice*](https://docs.google.com/document/d/1iYy8l9WfByJB57TAYzOwY_r1QuctuBpE7sngV-Cxy1A/edit?usp=sharing)*.*

[!When completed, Task 3 will be linked here]!

*\*Official directions and rubric:* [*C951 task 2 directions and rubric*](https://drive.google.com/file/d/1T6TbBNQRegkK8JW-15ydIZVERqy836ni/view)*.*

**Video:** [**C951 task 2: getting started with CoppeliaSim**](https://wgu.hosted.panopto.com/Panopto/Pages/Viewer.aspx?id=fac0a84e-e077-4e42-974e-acd30172e7c0)

Scenario

You are a computer scientist tasked with designing a disaster-relief robot. Using the Coppelia Robotics virtual robot software, you must create an environment modeling a disaster scenario, and a robot which can perform some disaster aide job free from direct input. The disaster scenario and the robot’s job will be of your choosing.

Project Summary

Using only the free educational version of CoppeliaSim, you will:

* Create an environment with at least two obstacles which models a “disaster.”

*There is no requirement specifying the complexity of the environment or obstacles. It only needs to reasonably approximate the scenario you are trying model, e.g., desks or victims could be modeled with plain blocks or cylinders.*

* Create or modify a robot with at least two sensors which independently performs some job related to disaster relief.

*There is no requirement specifying the complexity of the chosen job -only that the robot can complete it.*

You will write a document specifically addressing each section of the rubric as outlined by the rubric competencies (see details below).

*Typically 2-3 sentences per section suffice. Attempt to at least minimally address everything mentioned in the rubric competency. Evaluators only check for completeness and accuracy. Quality is minimally assessed (and only for some sections), but excluding an item in the rubric will definitely get a section marked “not evident” or “approaching competence.”*

You will submit a [Panopto](https://wgu.hosted.panopto.com/Panopto/Pages/Home.aspx) video recording verbally explaining the processes of your robot as it completes its assigned job in the simulation software..

*Verbally summarize what the robot is doing while you run the simulation. Evaluators only need to see it run on your machine while getting an overview of your project.*

**Technical Requirements and Resources:**

* [Panopto Access](https://wgu.hosted.panopto.com/Panopto/Pages/Home.aspx) Sign in using the "WGU" option. If prompted, log in with your WGU student portal credentials, which should forward you to Panopto's website. If you have any problems accessing Panopto, please contact Assessment Services at [assessmentservices@wgu.edu](mailto:assessmentservices@wgu.edu) (course instructors cannot directly fix this). *It may take up to two business days to receive your WGU Panopto recording permissions* once you have begun the course.
* Videos:
  + [C951 task 2: getting started with CoppeliaSim](https://wgu.hosted.panopto.com/Panopto/Pages/Viewer.aspx?id=fac0a84e-e077-4e42-974e-acd30172e7c0)
  + [CoppeliaSim (aka V-Rep) introduction and bump sensor implementation](https://www.youtube.com/watch?v=w68jmN1IBpo&t=1247s)
* Code downloaded from the internet or acquired from another student or any other source may not be submitted and will result in automatic failure of this assessment.

**Recommendations:**

* First, look at the included tutorial .ttt files and choose a job within the scope of those sample files.

‘C:\Program Files\CoppeliaRobotics\CoppeliaSimEdu\tutorials’

You can copy, paste, modify those scripts. If you choose your job wisely, you can complete the project with only minor changes to the tutorial file. Keep in mind that this is not a CoppeliaSim course. Like AIML, it’s a tool we use, but their technical aspects should not be the focus.

* Organize your document so that it specifically addresses the rubric requirements. For example:

Text, letter

Description automatically generated

Typically 2-3 sentences suffice per section. This approach makes it easier to write, grade, and fix -if necessary. Mention everything in the rubric requirements, even if it’s redundant or superfluous. The coding/annotations sections of the directions are only suggestions.

* Try to do at least the minimum for *every* section on your first submission. If returned, you will receive direct detailed comments from the evaluator, limiting the scope of your corrections to only those marked sections.

**Comments on evaluations:**

* Course Instructors are available to answers specific questions about your project or submission. However, we do not evaluate the performance assessments. If you did your best to meet the requirements, it is usually best to submit the task and let the evaluator tell you which parts need correction. You then can work with your course instructor and use the evaluator’s comments to fix only those sections.
* Evaluators are required to respond using the following format:
  + Acknowledge anything written attempting to address the rubric section (even if incorrect or irrelevant).
  + State what is missing or incorrect addressing the rubric section.
  + Automatically mark sections as “Not Evident,” i.e., red,  if a  dependent section does not pass.  For example, if part B is missing, part C may be marked red without being evaluated.
* If an evaluator writes “insufficient details…” (or something similar), the entry is typically closed to being accepted -they just need more.

Rubric Requirements Summary

Note: The sections below have paraphrased or restated the official [*C951 task 2 directions and rubric*](https://drive.google.com/file/d/1T6TbBNQRegkK8JW-15ydIZVERqy836ni/view) for better readability and alignment with general evaluation practices. The official directions and rubric can be found on your C951 COS page.

A: DISASTER ENVIRONMENT

The submission accurately describes the chosen disaster recovery environment with two additional obstacles.

*Here you describe the environment and identify the disaster situation. What qualifies as a unique “obstacle” is not defined. So may describe your two obstacles according to type or quantity. Evaluators have accepted both.*

B: IMPROVED DISASTER RECOVERY

The submission accurately explains how the robot will improve disaster recovery in the environment from part A after the two obstacles are added.

*Here you define your robot’s job and justify that completion of the job will help the situation described in part A. In your description of how the robot will help, include a description of the robot will deal with the two obstacles.*

C: ARCHITECTURE

The submission accurately justifies the modifications made to the robot’s architecture, including both added sensors. The submission accurately explains how the additional sensors will aid the disaster recovery effort.

*By “modifications'' they mean the robot you modified from a resource such as the bubbleRob tutorial OR the robot you built from the ground up. The discussion of you design decisions must include a description of two sensors and how the help the robot complete its task. Other than the number, there is no specification for the sensors. Both sensors can be of the same type and perform similar functions.*

D: INTERNAL REPRESENTATION OF THE ENVIRONMENT

The submission accurately describes how the robot maintains an internal representation of the

environment.

*Describe how the robot collects knowledge (through its sensors) about the environment and uses that information to make decisions. Technically, they do not specify that the information be maintained in memory; they only ask that you describe it. So your description could include shortcomings.*

E: REASONING, KNOWLEDGE REPRESENTATION, UNCERTAINTY, AND INTELLIGENCE

The submission accurately and logically explains how the robot implements each of the four given concepts to achieve its goal.

*These concepts are not rigorously defined, and evaluators have been interpreting them broadly. Specifically mention each concept and relate your robots’ functionality to that concept; the descriptions can overlap.*

***Knowledge:*** *Describe how your robot collects information about its environment.*

***Reasoning:*** *Describe how your robot makes decisions.*

***Uncertainty:*** *Describe how your robot can adapt to the environment it has no previous knowledge about.*

***Intelligence:*** *Describe how your robot makes use of its functions to achieve its goal. This might include how knowledge and reasoning are applied to overcome uncertainty.*

F: FURTHER IMPROVEMENTS

The submission logically and accurately explains how the prototype could be further improved, and it explains how both reinforced learning and advanced search algorithms can improve the prototype’s performance and learning.

*Your robot does not need to use machine learning or advanced search algorithms. You only need to describe how both could be used to improve your robot.*

[***Reinforced learning***](https://www.geeksforgeeks.org/what-is-reinforcement-learning/)*is a machine learning method that gives awards (or penalties) for outcomes, and uses those results to improve behavior.*

***“Advanced” search algorithms.*** *What qualifies as “advanced” is not defined. Evaluators have accepted any description which improves the robot’s current search method.*

H: PANOPTO RECORDING

The Panopto video recording demonstrates the robot’s functionalities to stakeholders who are nonpractitioners in a way they would understand, and the video recording includes all 7 of

the required segments.

*This is basically an overview of the previous sections and a demonstration that your robot works as intended.*

*Provide a brief, layman’s verbal description of the*

* *The disaster and the problem(s) it presents.*
* *The environment.*
* *The obstacles.*
* *What the robot needs to do to be successful.*
* *The robot’s design*

*Then press “play” and as the robot completes its task describe how the robot gathers information, makes decisions, etc.*

* *Demonstrate the robot completing it’s job successfully.*

*After the demonstration describe,*

* *An assessment of the robot’s capabilities.*
* *Ways the robot might be improved*

*You must use WGU’s Panopto video service. This section can be excluded from your document as you will provide the link separately in your submission. Be aware that gaining Panopto Access may take up to two days. Unfortunately, CIs cannot help with this. If you still have issues after two business days, we may need to contact assessment services: Assessment Services* [*assessmentservices@wgu.edu*](mailto:assessmentservices@wgu.edu)*.*

[Panopto Access](https://wgu.hosted.panopto.com/)

Sign in using the "WGU" option. If prompted, log in with your WGU student portal credentials, which should forward you to Panopto's website. If you have any problems accessing Panopto, please contact Assessment Services at assessmentservices@wgu.edu. It will take **up to two business days** to receive your WGU Panopto recording permissions once you have been referred for the course.

*The official directions state “To submit your recording, upload it to the Panopto drop box titled “INTRODUCTION TO ARTIFICIAL INTELLIGENCE – NIP2 Task 2 | C951.” However, no such “drop box” exists. Evaluators only need a working Panopto link.*

*Be sure to CHECK THE SHARE SETTINGS:*

*Graphical user interface, text, application, email

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*Unsaved changes will not take effect.*

I: SOURCES

The submission includes in-text citations for properly quoted sources, paraphrased, or summarized and a reference list that accurately identifies the author, date, title, and source location as available.

*You must follow (*[*APA standards*](https://wgu.mindedgeonline.com/content.php?cid=48184)*). Contact the writing center for questions or help with this portion. If no sources were used, include a sources section in your documentation stating “no sources were used.” Every source listed must have a matching in-text citation; sources not warranting an in-text citation should be excluded. You should include all code in code comments.*

M: PROFESSIONAL COMMUNICATION

The content reflects an attention to detail, is organized, and focuses on the main ideas as prescribed in the task or chosen by the candidate. Terminology is pertinent, is used correctly, and effectively conveys the intended meaning. Mechanics, usage, and grammar promote accurate interpretation and understanding.

*Don’t overlook this! Small grammar errors are one of the most common reasons for rejected submissions. The submitted document should be grammatically correct and easy to read. Make use of one of the many freely available* [*grammar checkers*](https://app.grammarly.com/) *(evaluators use grammarly.com) or the* [*writing center*](https://my.wgu.edu/success-centers/writing-center)*.*

C951 Task 2 Performance Assessment FAQ

**Do I need to read the textbook before starting this task?**

Some parts could help. Indeed you can make this task as complex as you like, but meeting the minimum requirements does not require engaging the textbook.

**Aside from working and being able to complete my job, does my robot have to \_\_\_\_?**

No. Other than having two robot sensors and two obstacles in the environment, there are no specifications for complexity in the requirements.

**Do I have to use Panopto?**

Yes. However, if for some reason you do not have access to a machine that supports Pantopto, please contact your course instructor, and they will work with the evaluation team to find a suitable alternative.

**I can’t get Panopto to work.**

Panopto access can take up to two days (see below). Unfortunately, CIs cannot help with this. If you still have issues after two business days, we may need to contact assessment services: Assessment Services [assessmentservices@wgu.edu](mailto:assessmentservices@wgu.edu).

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**Do I need to appear in the Panopto video?**

No, just a voice-over is fine. Mostly, they want to see a session successfully complete on your machine.

**Where is the Panopto folder or ”drop box” mentioned in the task directions?**

The official directions state “To submit your recording, upload it to the Panopto drop box titled “INTRODUCTION TO ARTIFICIAL INTELLIGENCE – NIP2 Task 2 | C951.” However, no such “drop box” exists. Evaluators only need a working Panopto link.

**Other questions?**

Make an appointment with any [C951 course faculty](https://timetrade.com/app/wgu-mentoring/workflows/WGU200/schedule/?locationId=course_mentoring&appointmentTypeGroupId=C951&resourceId=any&attendee_person_firstName=Daniel&attendee_person_lastName=Neff&attendee_email=dneff5@my.wgu.edu&attendee_mobile_phoneNumber=(408)%20309-5231&attendee_customField0=000963169&questionId__course_code=C951), or send an email to our team inbox cmcomputerscience@wgu.edu.