

# 2021 Virtual Project Day Scavenger Hunt

1. Project: TAG: Automated Image Captioning ~~ What is the purpose of automated image captioning used in this research study? \*

- ☐ Increase accessibility of viewing images
- ☐ To eliminate the need to hire people for captioning images
- ☐ Determine the accuracy of automated image captioning
- ☐ Both A and C

2. Project: Gas Level Detector ~~ What was the purpose of this project? \*

- ☐ To create an easy way for firefighters to measure the levels of certain gasses
- ☐ To send automatic updates to ensure firefighters know what type of environment they are in
- ☐ Provide GPS coordinates to other dispatched units
- ☐ Both A & B

3. Project: SMPS EMC Counter-Measure Study ~~ What is the purpose of switching mode power supplies? \*

- ☐ To decrease the amount of electricity used
- ☐ To reduce the amount of noise produced
- ☐ To change the type of noise produced
- ☐ To identify the best snuffer

4. Project: Depth Camera Implementation for the Tunnel World ~~ How is the depth camera used for navigation in the tunnel world? \*

- ☐ Sensors enable the controller to intercept its surroundings to navigate its environment
- ☐ Trial and error
- ☐ The camera is connected to a person who is navigating and controlling the size and speed of the animat
- ☐ Camera uses infrared sensors to detect proximity to obstacles

5. Project: The Big Green Tractor ~~ What occurs if you hit button 9 in the controls on the tractor? \*

- ☐ The tractors back door opens
- ☐ The tractor moves forward
- ☐ The tractor moves in reverse
- ☐ The tractor starts singing "She Thinks My Tractor's Sexy" by Kenny Chesney

6. Project: GVSU Historical Interactive Map ~~ What color are the residential buildings on the historical interactive map of GVSU? \*

- ☐ Red
- ☐ Blue
- ☐ Green
- ☐ White

7. Project: LCD & Robotic Arm Control System ~~ Which of the following is NOT a feature of the robotic arm control system? \*
- ☐ Rotate 90 degrees
  - ☐ Gripper: open and close
  - ☐ Up and down
  - ☐ Forward and back
8. Project: ASPC Branch and Leaf ~~ What of the following is NOT included in the branch and leaf system? \*
- ☐ A touchscreen that shows the current state of the machine
  - ☐ A button to switch the state of the machine
  - ☐ A green light to signify completion
  - ☐ A buzzer to indicate user error
9. Project: Shape Changing: Using Morphology to Alter Tunnel Maze Navigation ~~ What parameter(s) was found to be the most successful for using morphology to alter tunnel maze navigation? \*
- ☐ Increasing morph penalty is the most important parameter
  - ☐ Localization is the most important parameter
  - ☐ Increasing morph penalty and localization are both equally important parameters
  - ☐ Apply a genetic algorithm
10. Project: SnapQ ~~ Which crowdsourcing tool did the SnapQ team use? \*
- ☐ Facebook groups
  - ☐ Amazon MTurk
  - ☐ Google Opinion Rewards
  - ☐ Twitter Responses
11. Project: The Bageler ~~ Why did the team choose to rotate the bagel inside the toaster? \*
- ☐ To speed up the time it took to toast
  - ☐ To make the process more enjoyable
  - ☐ To ensure even toasting
  - ☐ To be able to use less energy for heating
12. Project: Bluetooth Toaster ~~ How does this Bluetooth toaster differ from a base toaster model? \*
- ☐ The user can customize their desired toast level using a visual aid
  - ☐ It runs off battery power
  - ☐ It produces a consistent toast
  - ☐ Both A and C
13. Project: Smart Toaster ~~ What makes the smart toaster more efficient than a typical toaster? \*
- ☐ Arduino circuit board
  - ☐ Bluetooth and phone application
  - ☐ Consistent toasting
  - ☐ All of the above

14. Project: Low Pass Multi-stage Filter ~~ What does the filter provide filtering for? \*

- ☐ Common mode
- ☐ Differential noise
- ☐ Both A and B
- ☐ Ultraviolet radiation

15. Project: Using Machine Learning for Detection of COVID-19 What is the purpose of a convolutional neural network (CNN) used in this research project? \*

- ☐ To determine validation accuracy of the model
- ☐ To extract important features out of the image
- ☐ To model the human brain
- ☐ To inform the public about an outbreak

16. Project: Water Quality Monitoring Buoy ~~ This solar-powered buoy is used to monitor the following water quality measures EXCEPT: \*

- ☐ pH
- ☐ Turbidity
- ☐ Calcium
- ☐ Temperature

17. Project: Ambient Lighting System ~~ Some possible revisions for this project include all of the following EXCEPT?

- ☐ Larger battery
- ☐ Smaller case for the controls
- ☐ Better algorithm for designing the colors
- ☐ Better amplifier