Group Members:

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Team name:

Folk Detect Innovative Bison

Project Topic:

Climbing wall mapping + hold detection + tape detection = route identification
(Maybe route matching based on an arbitrary picture of a route too)

Schedule:

11/9: Collect photos

- Go to the Gregory rock wall and take at least three sets of photos to make panoramas from
- In the three sets of photos make sure to have easy, moderate, and difficult paths
- In the three sets of photos make sure to have at least 2 paths per set (6 total)

11/10: Create panoramas and ground truth data

- Create panoramas from our photo sets
- For each of the three panoramas, manually mark the holds
- For each of the three panoramas, manually mark the paths
- Update progress report for the first check in on 11/13

11/16: Find the holds programmatically

- Write code that when given a photo will mark all of the rock wall holds on that photo using one or more of the following methods:
    - Feature Detection
    - Background subtraction of the rock wall face
- Attain at least 60% accuracy when comparing our programmatically calculated holds with the ground truth holds

11/17: Find the path tapes programmatically

- Write code that when given a photo will find all of the tape pieces on that photo using one or more of the following methods:
    - Feature Detection
    - Background subtraction of the rock wall face
- Group the found tape pieces into groups based on their color
    - For each piece of tape, compare it to all other pieces of tape and form a list sorted by the similarity of each tape piece.
    - The most similar n pieces of tape (where n will need to be determined) will be grouped together and removed from the list of tape pieces before the next iteration.

    - By the end of the looping all tape pieces will be categorized based on their similarity into a number of groups, where each group is the collection of tape pieces within a path
- Attain at least 50% accuracy for the groupings of the tape. We hope to achieve a success rate higher than this, but we anticipate the tape groupings to be the most difficult part of the project.

11/23: Create paths from the found tapes

- Using the tape groupings and the holds, generate the most likely paths on the panorama
- Use a heuristic that eliminates paths that can't be completed feasibly by a human, such as a path where two holds in the path are several meters apart from each other
- Attain at least 60% accuracy when comparing our programmatically calculated paths with the ground truth paths

11/24: Make presentation for class

- Make a PowerPoint presentation with photos to use as examples when presenting
- Split the presentation up into sections for each member to discuss with the class:
    - Introduction and project topic
    - Implementation of hold detection
    - Implementation of route/path detection
    - Results and conclusion
- Be ready to present on 11/25, the next day