

CS 175: Project in AI (in Minecraft): Spring 2017

Project Proposal

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<http://sameersingh.org/courses/aiproj/sp17/>

For the proposal, you have to finalize your group members, propose an idea for your course project, describe the evaluation plan, and set up project website with a page for this submission.

1 Setting a Repository and a Website

For the project that you will be working on this quarter, we expect you to maintain a Github repository for the code, and an associated website. I have given a detailed step-by-step guide below, and although it looks like there are a lot of steps involved, it shouldn't take you more than 15 minutes if you're familiar with `git`.

1.1 Setting up the Repository

Here are a steps to create a new repository on Github:

1. If you don't have a Github account, sign up for one for free, and ask all for your group members to sign up for one as well. Read some tutorials on how `git` works¹, and get comfortable in it; you will be using it to maintain the website and the code for the project.
2. In order to create a repository that will store your project code and website, pick one of the group members under which the repo will be created. For simplicity, I will assume the repo will be created under the Github username `USER`.
3. That person should log in, go to the `+` on the top right, and click *New repository*. Select a short name of your group/project, and name your repository that (let's assume you called it `PROJECT`). Make sure the owner is `USER`, make it public if you're new to this, click *Initialize with a README*, and then click *Create repository*. Congrats, your repository should now be created (with a url like `github.com/USER/PROJECT`), and you can commit whatever you want!
4. In order to add your group members to the repository, go to the *Settings* tab, click *Collaborators*, and add all of your group members using their Github IDs. They should be able to commit/edit files in the repo once they accept the invitation (ask them to test it out).

Advanced Users: If you're familiar with Github, feel free to create the repo under an organization if you like. You can also create a private repository if you prefer, but add the course staff as collaborators (`sameersingh`, `MosheLichman`, and `wangzheallen`).

1.2 Setting up the Website

I will provide some files and the steps to get started in order to create a website for your project. Here, I will assume your project repository is hosted at `github.com/USER/PROJECT`. The following steps can be followed by the owner or any one of the group members (who have been added as "Collaborators" in the previous section).

1. Download the zip file from <https://github.com/sameersingh/gh-skeleton/releases/tag/cs175sp17>.
2. Unzip the file somewhere on your disk; you will see that insides `docs/`, there are only 5 files, in 2 folders.
3. Create a `docs/` folder in your project repo, and commit the files from the above `docs/` folder into it, using either the command-line (preferred) or uploading them one by one using the GUI.

¹Here are two: <https://try.github.io/> and <https://guides.github.com/activities/hello-world/>

4. If successful, your repo online, `github.com/USER/PROJECT` should have a `docs/` folder in it, which should have the same structure as: `https://github.com/sameersingh/gh-skeleton/tree/master/docs`. If you have any questions, post it on Piazza along with your repo URL, so that we can help you with it.

Once the `docs/` folder is created and contains the same structure as `https://github.com/sameersingh/gh-skeleton/`, it is time to make the website public! The owner, `USER` in this case, should now log in and:

1. Go to *Settings* again, scroll down to the *Github Pages* section, and select the second option (*master branch/docs folder*). If it is unavailable, you do not have a `docs/` folder in the root of your repo; ensure the file structure is there, and return to this step.
2. Press *Save*, and it should say *Github Pages source saved.* at the top of the page.
3. Now open a new tab, and go to `USER.github.io/PROJECT`. There should be a website there, and should look exactly like `http://sameersingh.github.io/gh-skeleton/`.

Again, if you have any questions, post on Piazza how far you got, where you got stuck, and a link to the repository. Now that your website is up, it's time to make it *yours*. Any one of the group members can do the following:

1. Edit `_config.yml` and change the title from "PROJECT" to the name of the repository (do not make other changes to this file unless you know what you're doing). You can do these edits from Github website itself, just navigate to the file and click the edit button (looks like a pencil icon). Commit and push your changes, and in a few minutes, your website should change to reflect the new name on the front page and navigation bar.
2. (optional) Edit `index.md` to put whatever you want. If you use the Github website to make these edits, you can use *Preview* button to see what the front page will look like. Just do not remove or edit the first four lines (the stuff in between, and including, the `---`) unless you know what you are doing. Once you commit and push your changes, you should see the website reflect it. The default text on this page has some basic information about Markdown, and a link to a complete guide on how to format using Markdown.
3. Edit `team.md` and replace the placeholders with your teammates and their UCINetIDs (**NOT** the student ID number!). Unless you are familiar with Markdown, you don't need to add anything else. If you want to make more edits, or make it look prettier, just look up guides on Markdown, and edit it as you see fit. For example, you can add more information if you like, such as photos, links to homepages, links to Github profile, etc. Commit and push your changes, and in a few minutes, the team page of your website should have the new information.

Advanced Users: If you're familiar with Github Pages, you can completely ignore my skeleton (it's pretty ugly and basic after all), and do whatever you like. The only constraints are (1) you have to use the `docs/` method of Github Pages, (2) that there should be a dedicated page for the team and one for the proposal (and later, for other project submissions), and (3) the links to these pages should be obvious from the main page.

2 Contents of the Proposal

2.1 Creating a Proposal Page (15 points)

You will notice that there is a greyed out link to the proposal in the navigation bar, that gives an error if you click on it. This will change once you create a `docs/proposal.md` file with the following header as the first four lines:

```
1 ---
2 layout: default
3 title: Proposal
4 ---
```

The rest of the file should contain the rest of the proposal, using the Markdown format (headings start with `##`, one for each section below, and regular text doesn't need any formatting). Commit and push your new file, and the link should be active in a few minutes. As long as you have a website and a proposal page, you'll get these points.

2.2 Summary of the Project (30 points)

In a paragraph or so, mention the main idea behind your project. At the very least, you should have a sentence that clearly explains the input/output semantics of your project, i.e. what information will it take as input, and what will it produce. Mention any applications, if any, for your project.

2.3 AI/ML Algorithms (10 points)

In a single sentence, mention the AI and ML algorithm(s) you anticipate using for your project. It does not have to be a detailed description of the algorithm, even the sub-area of the field is sufficient. Examples of this include “planning with dynamic programming”, “reinforcement learning with neural function approximator”, “deep learning for images”, “min-max tree search with pruning”, and so on.

2.4 Evaluation Plan (30 points)

As described in class, mention how you will evaluate the success of your project. In a paragraph, focus on the quantitative evaluation: what are the metrics, what are the baselines, how much you expect your approach to improve the metric by, what data will you evaluate on, etc. In another paragraph, describe what qualitative analysis you will show to verify the project works, such as what are the *sanity cases* for the approach, how will you visualize the internals of the algorithm to verify it works, what’s your moonshot case, i.e. it’ll be awesome and impressive if you get there. Note that these are not promises, we’re not going to hold you to what you say here, but we want to see if you are able to think about evaluation of your project in a critical manner.

2.5 Appointment with the Instructor (15 points)

One member of the group should take an appointment with the instructor in the week starting 4/23 (or 4/30, if no slots are available). Select a time such that all members of the group can attend, unless one or more members of your group can absolutely not make any of the available times. In the proposal page, mention the date and time you have reserved the appointment for.

Use the following link to make your appointment: <https://calendly.com/sameersingh/office-hours>