

# Team name: Joker

# Team members: Jiacheng Zhou, Ruitao Shen, Shihang Liu, Siwei Guo, Yuanchi Guo

# Date: 02/23/2024

This journal has to be uploaded to 1) Canvas (will create assignments). **AND** 2) posted to your project website every two weeks by 11:59 pm on the second Friday (except the spring break). When uploading to Canvas, change the file name to "Team\_name\_MM-DD-2023" where MM = month and DD= day of upload).

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## Team roles for this report (write down name):

Facilitator(s): Siwei Guo

Recorder(s): Ruitao Shen, Shihang Liu

Deliverer(s): Yuanchi Guo

Planner(s): Jiacheng Zhou

See last page for description of roles. Obviously one person can take more than one role or there can be more than one person per role or make your own roles!

- 0. Describe briefly what the main goal of your team is (so the peer reviewer has some context). E.g. we are working on image classification for blah de blah. Our goal is blah de blah etc. In the initial part of the semester before your proposal it is ok to put down "we are still coming up with ideas on team project".**

Our project focuses on image classification. After comparing animal picture resources and fruit picture resources, we decided to proceed with fruit image classification due to the excessive variance within species of animals, which may complicate the identification process. Specifically, we aim to use a supervised method to train a model to identify fruit categories such as orange, banana, and peach based on categorical features. It is important to note that while fruit is our current priority, this may change once we begin the

analysis process. Our current group plan is to collect more fruit images from various internet sources such as GitHub and Kaggle to create a larger dataset for training purposes.

- I. What was done during the report period regarding the project:** If you want to include code include this in the Appendix. Describe what the group did (including contributions of individual team members) with regards to the group project during this report period. Give enough details so I understand what you folks have been doing over the week. Include dates of your meeting(s) and who met on these days.

Our group meets every Sunday morning from 10 am to 11 am. We have already had two meetings. In the meeting on 2/11, we discussed the project goals and selected the objects of study. Jiacheng and Yuanchi did the animal images collection, Shihang and Ruitao did the fruit images collection, and Siwei did the plant images collection. After comparing the quantity and quality of the different images and considering the difficulty of analysis, all group members agreed to focus on fruit image identification.

In the meeting on 2/18, we discussed potential machine learning methods together. Each group member studied potential methods and communicated with each other. After the discussion, we found an interesting one called Convolutional Neural Networks (CNNs). CNNs are specifically designed to analyze visual data, making them well-suited for tasks like image classification, which is an ideal method for our project.

- II. What were obstacles faced if any in working on the project?** This could be technical (like not being able to implement or understand particular techniques) or time issues (midterms for other courses etc).

Currently, there are no significant obstacles. One potential issue that may arise later is the variation in quality among training images, which could lead to inaccuracies in the image identification process.

- III. What is the plan for the next reporting period including what each team member is planning to work on. Describe goals and potential timelines (“ I plan to finish understanding x to see if it can be implemented for our project by Wednesday etc”. )**

Before the next reporting period, we will gradually settle down and finalize our image dataset, as well as list multiple potential methods for compare purpose. Siwei will expand the group image database with images from more fruit categories and delve deeper into the specific steps and processes of applying CNN. Jiacheng

and Yuanchi will do the data collection works. They plan to gather a diverse dataset: Collect a large number of images containing apples and pears. Ensure diversity in terms of size, shape, color, and background to improve model robustness. Ruitao and Shihang will use several methods including image resizing: Standardize images to a common size to facilitate processing, normalization: Scale pixel values to a range (e.g., 0 to 1) to help the model learn more efficiently, and augmentation: Apply transformations like rotation, flipping, and scaling to increase dataset size and variability to process those data.

While in the biweekly document above you will describe what your team did with regards to the team project (with proper attributions of who did what in the week) there are 4 pre-defined roles. I urge you to have different people do these jobs every week so that you gain experience in each of the jobs. There can also be more than one person per job for example 2 people recording the weekly journal.

**Facilitator:** Manages the group for this week including setting up times for group members to meet, making sure everyone has a say in the meetings etc.

**Recorder:** Person in charge of recording the meetings as well as the happenings of the past two weeks and describing what was accomplished in the meeting and writing up this report.

**Deliverer:** Person in charge of checking the entire report and uploading the file to dropbox folder and project website, as well as the representative of the group getting in touch with the instructor.

**Planner:** Person in charge of what will be happening next two weeks as well as thinking about longer term goals (what more needs to be done for the project).

**Team contact:** Person I can email if I see any issues in the biweekly report instead of mass spamming everyone in the team.