

# Grading

## General

The entire project has 100 points (+ bonus 10 points) and will account for 40% (+ bonus 4%) of your class grade. The specific points are as follows:

- Proposal (15 Points)
- Draft (20 Points)
- Final colab notebook (55 Points)
- Video (10 Points)
- PyHealth contribution/use case (bonus 10 points)

## Proposal (15 Points)

PDF write-up, up to 3 pages + unlimited references

You need to have all eight items listed in the project instructions (citation to the original paper, general problem, specific approach, hypotheses to be tested, ablations planned, description of how you will access the data, a discussion of the feasibility of the computation, whether you will use the existing code or not). There is no specific format for the proposal.

For this component we will not judge quality unless you put complete nonsense for an item (then it will be considered 'missing') but we will give you feedback if we think there are problems.

- Missing citation to the original paper (-1)
- Missing general problem (-2)
- Missing specific approach (-2)
- Missing hypotheses to be tested (-2)
- Missing ablations planned (-2)
- Missing description of how you will access the data (-2)
- Missing discussion of the feasibility of the computation (-2)
- Missing statement of whether you will use the existing code or not (-2)
- Exceed page limits (-1)

## Draft (20 Points)

Jupyter Notebook (both .PDF and .ipynb files)

You need to use the report template and fill out the following sections, each of which we will score based on the clarity and appropriateness of your writing (percentage of total grade for each component shown). All the information must be in the Jupyter notebook.

- Introduction (2)
  - A clear, high-level description of what the original paper is about and what is the contribution of it
- Scope of reproducibility (2)
- Methodology (8)
  - Data
    - Data descriptions
    - Implementation code
  - Model
    - Model descriptions
    - Implementation code
  - Training
    - Computational requirements
    - Implementation code
  - Evaluation
    - Metrics descriptions
    - Implementation code
- Results (8)
  - Results
  - Analyses
  - Plans

## Final Descriptive Notebook Report (55 Points)

Jupyter Notebook (both in .PDF and .ipynb format)

- Introduction (5):
  - A clear, high-level description of what the original paper is about and what is the contribution of it
- Scope of reproducibility (5)
- Methodology (15)
  - Environment
    - Python version
    - Dependencies/packages needed
  - Data
    - Data download instruction
    - Data descriptions with helpful charts and visualizations

- Preprocessing code + command
- Model
  - Citation to the original paper
  - Link to the original paper's repo (if applicable)
  - Model descriptions
  - Implementation code
  - Pretrained model (if applicable)
- Training
  - Hyperparams
    - Report at least 3 types of hyperparameters such as learning rate, batch size, hidden size, dropout
  - Computational requirements
    - Report at least 3 types of requirements such as type of hardware, avg runtime for each epoch, total number of trial, GPU hrs used, # training epochs
    - Training code
- Evaluation
  - 
  - Metrics descriptions
  - Evaluation code
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- Results (15)
  - Table of results (no need to include additional experiments, but main reproducibility result should be included)
  - All claims should be supported by experiment results
  - Discuss with respect to the hypothesis and results from the original paper
  - Experiments beyond the original paper
    - Credits for each experiment depend on how hard it is to run the experiments. Each experiment should include results and discussion
    - Ablation Study.
- Discussion (10)
  - Implications of the experimental results, whether the original paper was reproducible, and if it wasn't, what factors made it irreproducible
  - "What was easy"
  - "What was difficult"
  - Recommendations to the original authors or others who work in this area for improving reproducibility
- Public GitHub Repo (5)
  - Publish your code in a public repository on GitHub and attach the URL in the notebook.
  - Make sure your code is documented properly.
    - A README.md file describing the exact steps to run your code is required.

- Check “ML Code Completeness Checklist”  
(<https://github.com/paperswithcode/releasing-research-code>)
- Check “Best Practices for Reproducibility”  
([https://www.cs.mcgill.ca/~ksinha4/practices\\_for\\_reproducibility/](https://www.cs.mcgill.ca/~ksinha4/practices_for_reproducibility/))

## Video Presentation (10 Points)

Walkthrough of the notebook, **no need to make slides**. We expect a well-timed, well-presented presentation. You should clearly explain what the original paper is about (what the general problem is, what the specific approach taken was, and what the results claimed were) and what you encountered when you attempted to reproduce the results. You should use the time given to you and not too much (or too little).

- ≤ 4 mins
- Explain the general problem clearly
- Explain the specific approach taken in the paper clearly
- Explain reproduction attempts clearly

## PyHealth Contribution (Upto 10 bonus Points)

**We give a maximum of 10 bonus points.** We will process the PRs one by one following the submission order (we prefer new datasets and models), so please take action now (do not wait until the end of the semester). If we feel your contributions are valuable, we may work with you to integrate the PR into pyhealth. **Remember, the bonus score will be granted only if the PR is merged to the “master” branch.** You can understand our code structures from live videos, colab tutorials, and function descriptions, all on the website. **Please send the initial PR to “develop” branch.**

- New dataset (10 points)
  - please follow the existing dataset class structure  
<https://github.com/sunlabuiuc/PyHealth/tree/develop/pyhealth/datasets>
- New task (10 points)
  - please following the existing task function structure  
<https://github.com/sunlabuiuc/PyHealth/tree/develop/pyhealth/tasks>
- New ML model (10 points)
  - please following the existing model class structure  
<https://github.com/sunlabuiuc/PyHealth/tree/develop/pyhealth/models>
- New example/usecase of Pyhealth (5 points)
  - Demonstrate the use of PyHealth in your project and create a well documented example. The decision to integrate your example to the main repo will be at the discretion of PyHealth developers.
  - Checkout some of the examples:  
<https://github.com/sunlabuiuc/PyHealth/tree/master/examples>

