

# Guidelines for Weeks 11 to 14 (Assignments 10-13)

# CDS-492 Workflow

## ○ Stage 1 | Weeks 01-05

- Define problem or opportunity
- Conduct research on previous work
- Identify expected outcomes and
- Define sources of data
- Define type of algorithm(s) and coding platform(s)



- Proposal

## ○ Stage 2 | Weeks 06-10

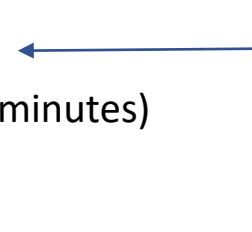
- Download and clean data
- Develop algorithm
- Generate results
- Compute performance



- Data and Algorithm

## ○ Stage 3 | Weeks 11-15

- Finalize data, algorithm, and results
- Develop writeup
  - Report as a paper
  - Presentation file and oral presentation (13 minutes)
- Lessons Learned
- GMU Survey
- Updated shared folders



- Report and Presentation
- Lessons learned, Survey
- Updated folders

# CDS-492 Class Grading

|                         |     |   |
|-------------------------|-----|---|
| ○ Class participation   | 10% |   |
| ○ Project deliverable 1 | 20% | Proposal and discussions                                    |
| ○ Project deliverable 2 | 30% | Presentation and PowerPoint document                        |
| ○ Project deliverable 3 | 40% | Final report, folders (data, code, papers, and assignments) |
| ○ Extra credit          | 05% | Lessons learned + GMU Survey                                |

# Timeline for Weeks 11-15

- **Every week**
  - Provide updated project and code workflows
  - Provide updates on changes made to work and slides of previous weeks
  - Provide updates on new work done during the week
- **Week 11 (week of 10/30) Assignment 10**
  - Finish work on the algorithm and have a draft of the results and performance of the algorithm
  - Start work on the paper
  - Write an abstract for your work. Use the provided file for guidelines (Writing\_an\_Abstract.pdf)
- **Week 12 (week of 11/06) Assignment 11**
  - Finish work on the project results
  - Work on the paper | Submit the draft paper as an assignment submission and discuss it in class
- **Week 13 (week of 11/13) Assignment 12**
  - Finish work on paper | Submit the (pre)-final paper as an assignment and discuss it in class
  - Work on the presentation | Submit the draft presentation as an assignment and discuss it in class
- **Week 14 (week of 11/20) Assignment 13**
  - Tuesday 11/21 | Submit the final paper, the presentation, the lessons learned, and the organized folders (as a shared link)
  - Wednesday 11/22 | Oral Presentations (10 minutes presentations + 3 minutes Q&A)
- **Week 15 (week of 11/27)**

# Structure of Folders

- **Create and maintain an updated folder structure for your class files as shown below:**
  - **CDS-492**
    - **Lectures**
    - **Assignments**
    - **Code**
      - **Version\_2023.XX.XX**
      - **Version\_2023.XX.XX**
    - **Data**
      - **Set\_01**
        - **Original**
        - **Conditioned**
      - **Set\_02**
      - **Set\_03**
    - **Helpers**
    - **Papers**
    - **Project**
      - **Paper**
      - **Poster**
  - Include all your weekly assignments in the assignments folder
  - Code files need to be well documented
  - Final folders need to have all files including the project submissions

# Paper and presentation Rubric

|              |  |    |
|--------------|--|----|
| Introduction | Clearly describes the problem that is being addressed in this project, the significance of the problem for the area of application(e.g., public health, basic science)   | 5  |
|              | Describes benefit of using a computational modeling approach to understand this problem  | 10 |
|              | Includes a brief review what has been done previously with appropriate references  | 10 |
| Methods      | Includes description of the model that was developed with appropriate equations and flow diagrams  | 5  |
|              | Integrates knowledge of computational techniques   | 10 |
|              | Includes description of the validation method that was used to evaluate the model, and the simulation experiments that were performed to validate and characterize the model. Describe the real data that was used | 5  |
| Results      | Describes the results of the simulation experiments that were performed to validate and characterize the model   | 20 |
|              | Graphs and figures should be properly labeled and captioned  | 10 |
| Discussion   | What did you learn from the results? Were the results expected or unexpected based on your judgment as a data scientist?   | 15 |
|              | How do the results improve your understanding of the biomedical problem described in the introduction  | 10 |

# Presentation Rubric

| Criteria                            | Outstanding<br>(90-100)   | Proficient<br>(80-89)  | Basic<br>(70-79)  | Below Expectations<br>(0-69)   |
|-------------------------------------|---|--|---|--|
| <b>Relevance (20%)</b>              | Clear connections between the presentation and the proposed project.  | Connections are made to the proposed project but they are sometimes not clear  | Limited connection between the presentation and the proposed project  | No connections between the proposed project and the presentation is made   |
| <b>Originality (20%)</b>            | The presentation presents an original perspective on the project.   | The presentation presents some new ideas, but they are not always original   | Few, if any new ideas, rehash or summarize existing information   | No new ideas, the presentation simply reads from the final project paper   |
| <b>Length (15%)</b>                 | Presentation is within the specified time limits  | Presentation deviates from the specified time limits by no more than 5%  | Presentation deviates from the specified time limits by no more than 10%  | Presentation deviates from the specified time limits by more than 10%  |
| <b>Style and Organization (15%)</b> | Presentation flows well with seamless transitions. Presentation is easy to follow. Presentation has a clear and focused theme without deviations. | Clear, generally flows well, with 1 to 2 abrupt transitions. Generally the presentation has a clear theme with only few deviations | Somewhat clear and concise, but difficult to follow with 3 to 4 abrupt transitions. The presentation has a theme but it often deviates from it. | Difficult to understand and follow. Transitions are abrupt and disruptive. The theme is not clear and not focused.   |
| <b>Production Quality (20%)</b>     | The picture quality is always clear, sound is in complete sync with the imagery   | The picture quality is clear 90%-95% of the time, sound is in sync with the imagery 90%-95% of the time                            | The picture quality is clear 85%-75% of the time, sound is in sync with the imagery 85%-75% of the time   | The picture quality is clear less than 75% of the time, sound is in sync with the imagery less than 75% of the time. |
| <b>Visuals (10%)</b>                | The use of visuals is always appropriate; Clear connection to the contents  | The use of visuals is appropriate and clear for the most part  | The use of visuals is appropriate and clear only some of the time   | The use of visuals is not appropriate and clear  |

# Presentation Tips

Some tips for a successful presentation:

1. REHEARSE FIRST
2. Make sure your talk does not exceed 13 mins (10 mins presentation + 3 mins Q&A).
3. A rough guide (not binding) is to use no more than 10-15 slides.
4. You should plan to allocate about 3 mins for Introduction, 3 min for Methods, and 4 min for Results and Discussion.
5. Avoid using a lot of equations on slides. You will be better off using graphical aids, like plots, whenever possible rather than equations.
6. Make sure each slide has a descriptive title. Do not simply use “Introduction”, “Methods” or “Results” as slide titles. Use active titles whenever possible. For example: “Results show detection accuracy of 90%”
7. Try to avoid too much text on each slide. Do not use full sentences, but rather use bulleted lists of short phrases, no more than 3-4 bullets per slide. Use figures and plots rather than plain text whenever possible.
8. The slides should be self-explanatory, i.e., the audience should be able to follow your main message based on the slides even if they do not listen to a single word you said (or forgot to say).
9. Use a proper background and text color for slides. Use the CDS-492 Powerpoint template. Typically, a dark background with light-colored text (e.g., black with light yellow text, or dark blue with light yellow text), or a light background with dark text (white with black or dark blue/dark green text) works best. Avoid color combinations that are hard to see (e.g., red/green, red/blue, cyan/yellow or white/light green). Use a consistent style throughout.
10. Run spellcheck for typos. Make sure you use consistent capitalization in titles.