

Integrative Summary Assignment

CS/ECE/ME 532 – Matrix Methods in Machine Learning Spring 2021

The integrative summary assignments are intended to help you master the course concepts and to develop a wholistic view of the course content – especially how the individual topics are related and fit together. It runs throughout the entire course.

There are three parts to this assignment:

1. At the end of each class period/activity, write a bullet lists of 2–5 key points associated with the activity and the corresponding videos for your own records. This is portion of the integrative summary is not graded, but will help you complete the summaries below.
2. Unit summaries (75 word maximum) of the key ideas in each unit. There will be a total of five unit summaries (Unit 1, Unit 2, Unit 3&4, Unit 5, and Unit 6). These are due after the corresponding unit mini-exam and submitted in a separate Canvas assignment.
3. A course summary (100 word maximum) of the entire course is also submitted in a separate Canvas assignment at the end of the semester.

Each of these describes the course content in a different level of detail. The bullet lists focus on the finest scale. The unit paragraph summary is at a higher level, and then the course summary takes a global view.

As an analogy, we may think of the course summary as describing the characteristics of a forest, the unit summaries describe characteristics of individual trees making up the forest, and the bullet lists describe the characteristics of the leaves on the trees. When describing a tree, you might describe the general characteristics of the leaves, but you'd also describe the structure supporting the leaves. That is, you'd set the leaves in context. Similarly, when describing the forest, you should set the trees in context and note things like distribution of various types of trees, density and so on. The level of detail in your description depends on the level of the object (leaf, tree, forest) you are summarizing.

DO NOT write your summaries as a historical account - that is, you should not write "... we learned ..." or "... we studied ...". DO write your summaries as factual, time-independent descriptions of the content in the unit, like you are being hired by a company to write copy that describes one of their products. Also, avoid lists of topics in a sentence - don't write "Unit X is about topic A, topic B, topic C, and topic D." Instead, describe relationships/distinctions between topics, why a topic is important, what it enables, and so on.

The unit and course summaries are entirely text and should not contain equations.

You are expected to communicate clearly and concisely with correct grammar. [The Writing Center](#) is a recommended campus resource for assistance with writing. Plan to consult with them well in advance of the due date so they can be of greatest benefit to you.

Grading

- Bullet lists associated with each activity are not graded, but are meant for your records when writing the unit summaries.
- Unit summaries and the course summary will be graded based on grammar/sentence structure (30 percent) and whether you represent important concepts (70 percent). Note that there is no single "correct" answer. Everyone is expected to have a somewhat different perspective on the material.
- This assignment is to be your own work and will be checked for plagiarism. Machine learning methods are very good at detecting plagiarism. Any cases of plagiarism will be pursued under the University of Wisconsin Academic Misconduct Policy and result in a penalty on the assignment.

Plagiarism

Plagiarism is taking someone else's ideas and presenting them as your own. Usually people think of plagiarism as copying someone else's writing without citation. This includes more nuanced behaviors like using a portion of work that you submitted for another class, or quoting someone out of context to convey a different meaning than the original author intended. You are responsible for understanding plagiarism. Please review the short (<10 minutes) [UW-Madison Library description of plagiarism](#).