

Basic Mathematical Models

For this assignment, you will research and present one mathematical model to the class. Your model will be assigned to you separately. To find yours, do the following:

- log into CSCADE
- choose Assignments for this course (CS5623)
- There will be a file named for a model (with a “.txt” extension) in the “Feedback” area of the assignment. Download this file to find the name of the model you will present (and additional instructions in some cases). You should also be able to access the file from the “Grades” area by clicking on the score for this assignment to produce the feedback info box.

Use books or online resources to research the model you are assigned. You will need to prepare a 7-9 minute presentation on your assigned model. This means you will probably only have time to give a very broad overview — it will help if you make slides or notes as you research and reduce it to the right amount of content.

Here are a few things that your presentation must include or answer each of the following:

- Show the mathematical formula defining your model, if one exists. If there is no formula, show an illustration, flow chart, or algorithm showing how the model works.
- What kinds of analyses are typically performed with your model. (i.e. What is your model “good at”? What is it not good at?)
- What kind of output does your model produce? (Classification or numeric value?) Most models are better at one than the other, but some can be used for both (sometimes with post-processing steps).
 - Can this model be used for *regression* tasks (i.e. producing a numeric output value). If this requires extra work, describe it.
 - Can this model be used for *classification* tasks? If this requires extra work, describe it.
- If you can find a representative illustration of what your model does (i.e. graphical representation), show it.
- Some models have variations or related models that are of interest. Be sure to mention this if your personalized instructions ask you to.

You should prepare slides of some kind (PowerPoint, Keynote, Reveal, Prezi, or whatever else you like) to show us the visual parts (formulas, illustrations) and (if you want) to help make the most important information visible. You can use your own laptop to show the slides if you want (we have an HDMI input, and can adapt from most laptops - if you aren't sure, ask).

If you are unable to present from your own laptop, email the slide deck to the course instructor no later than 5:00a.m. on the day of the presentation. Or, if you have an online slide deck or can put your slides on a USB flash drive, you may use the Windows machine already attached to the projector (USB-A 1,2, and 3 only – USB-C isn't supported by the classroom machine).