**ML520 – Lesson 1 Instructions**

**Problem Statement:** Use the Avila dataset to explore multiclass classification by utilizing the - One Versus All (OvA) and One Versus One (OvO) Classification methods. You utilize these methods when you classification is more than 2 groups (example: white, blue, and green). One Versus All (OvA) is where you follow similar logic to simple classification as you group them into 2 different categories, the category you want and everything else. For example if you wanted to identify how many were “white” you would have 2 groups 1) white 2) everything else – blue and green. One Versus One is where you compare all of the different groups so you run white vs blue, white vs green, etc.

**Resources:**

* **Assignment Location**
  + <https://labs.vocareum.com/lti/vclab.php?course=vc_2_0_102620216178558da9c6c&assignment=591720>
  + Canvas → Modules → Lesson 1: Introduction to Advanced Machine Learning → Lesson 01 Lab Assignments
* **Files**
  + The files can be found in the Vocareum environment and can be found under the Module for each week
  + Assignment File - ML520 - Lesson1
  + Data Files
    - avila-tr.txt (Training Set)
    - avila-ts.txt (Test Set)
    - avila-description.txt (Description)

**Grading Rubric:**

* Please submit by midnight on the due date or email the TA – Lauren Jensen [jensenl2@uw.edu](mailto:jensenl2@uw.edu) – if you need an extension
* Please complete the assignment in either Vocareum or Jupyter environments

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| **Criteria** | **Score** | | | **Total Points** |
| Building the Model - Generation and accuracy of your models, including evaluating your algorithm using the confusion\_matrix and classification\_report | 15 pts Excellent or good | 7 pts Satisfactory | 0 pts Unsatisfactory or Missing | 15 pts |
| Exploring Data – Analysis it for outliers, cleaning it, graphs, etc. | 5 pts Excellent or good | 3 pts Satisfactory | 0 pts Unsatisfactory or Missing | 5 pts |
| Explaining Reasoning – summarizing your models results, discussing insights (with words). Simple producing models and graphs without explanations does not work | 5 pts Excellent or good | 3 pts Satisfactory | 0 pts Unsatisfactory or Missing | 5 pts |
| **Total** |  |  |  | **25** |