**ML520 – Lesson 5 Instructions**

**Problem Statement:** Use the [data\_banknote\_authentication.csv](http://localhost:8888/edit/Desktop/Machine%20Learning%20Certification/TA/Adv/Lesson%205/data_banknote_authentication.csv) dataset to create an SVM from scratch.

**Resources:**

* **Assignment Location**
  + <https://labs.vocareum.com/lti/vclab.php?course=vc_2_0_102620216178558da9c6c&assignment=591731>
  + Canvas → Modules → Lesson 5: Support Vector Machine → Lesson 05 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 – Lesson5
  + Data Files
    - [data\_banknote\_authentication.csv](http://localhost:8888/edit/Desktop/Machine%20Learning%20Certification/TA/Adv/Lesson%205/data_banknote_authentication.csv)

**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** |