

**From:** Brian Feeny notifications@instructure.com  
**Subject:** Submission Comment: Ken Wood, Part Two — Application and Limitations of k-NN, Problem-Solving with Machine Learning  
**Date:** November 5, 2023 at 4:43 PM  
**To:** ken@roarmarketingconcepts.com

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BF

Brian Feeny just made a new comment on the submission for Ken Wood for Part Two — Application and Limitations of k-NN

**\*\*Feedback:\*\***

- **\*\*Question 1\*\***: Good job addressing the context and importance of the problem.
- **\*\*Question 2\*\***: Well-described inputs and feature transformations.
- **\*\*Question 3\*\***: Nicely explained potential outputs.
- **\*\*Question 4\*\***: Good observation about the possibility of dependent observations and their impact on train/test splitting.
- **\*\*Question 5\*\***: Clear explanation of the classification type and the goal of predicting fraudulent transactions.
- **\*\*Question 6\*\***: Adequate consideration of biases in train/test set splitting.
- **\*\*Question 7\*\***: Correct identification of binary cross-entropy loss as an appropriate loss function.
- **\*\*Question 8\*\***: You correctly identified the possibility of misclassification due to data points on the boundary between classification groups. However, instead of reducing  $k$ , you could consider other techniques such as adjusting the decision threshold or applying additional preprocessing steps.
- **\*\*Question 9\*\***: You accurately described the role of the distance function in k-NN and its importance for accuracy.
- **\*\*Question 10\*\***: Your explanation of the increased computing power and time with more observations and the solution of using  $k$ -d 'boxes' is correct.
- **\*\*Question 11\*\***: You correctly described the curse of dimensionality and why k-NN breaks down in high-dimensional space.

Overall, great job in understanding and answering the questions. Make sure to consider alternative solutions and provide more specific details in some of your explanations. Keep up the good work!



**Brian Feeny**

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