

Evaluation Form of Feature Importance and Dependencies

Hi participant, our research is focussed on presenting feature importance and dependencies in a coherent and useful manner. The visualisation that you have just seen presents data gathered from a Breast Cancer Dataset with features that are used to predict whether the cancer is benign or malignant. If you would like to learn more about the data, this can be done here: <https://www.kaggle.com/uciml/breast-cancer-wisconsin-data>

This purpose of this survey is to better understand your experience with our visualisation and to judge whether the data was presented in a clear and coherent manner.

By filling out this questionnaire, you consent to your data being used for research purposes.

If you have questions, you can contact: r.kapoor@student.utwente.nl

* Required

Questions about the visualisation

Please answer these questions whilst interacting with the visualisation.

1. What is the relative feature importance of “concave points_mean” by only excluding “area_worst” but including all other variables? (answer should be a number) *

2. Which feature combination leads to the lowest importance of “concave points_mean”?

3. What is the consequence of not including “perimeter_worst” but including “radius_worst” on “area_worst”?

4. Which feature has the highest dependencies on other features?

5. What is the dependency score between concave_points_worst and radius_worst?
(answer should be a number) *

Task
Complexity

The following questions will address how challenging the tasks in the previous section were.

6. I found the tasks difficult to complete *

Mark only one oval.

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | |
|-------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|----------------|
| Strongly disagree | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | Strongly agree |

7. Comments

8. I understood how the visualisation works *

Mark only one oval.

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | |
|-------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|----------------|
| Strongly disagree | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | Strongly agree |

9. Comments

10. The animations were useful in emphasising the particular features relations to each other. *

Mark only one oval.

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | |
|-------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|----------------|
| Strongly disagree | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | Strongly agree |

11. Comments

Effectiveness

The following 5 questions will address the effectiveness of the visualisation

12. The visualisation is useful. *

Mark only one oval.

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | |
|-------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|----------------|
| Strongly disagree | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | Strongly agree |

13. Comments

14. The visualisation does everything I would expect it to do. *

Mark only one oval.

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | |
|-------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|----------------|
| Strongly disagree | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | Strongly agree |

15. Comments

16. The right amount of data was presented (not too little, not too much). *

Mark only one oval.

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | |
|-------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|----------------|
| Strongly disagree | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | Strongly agree |

17. Comments

18. Given the context, the visualisation and the data presented was easy to understand. *

Mark only one oval.

| | | | | | | | | |
|-------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|----------------|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | |
| Strongly disagree | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | Strongly agree |

19. Comments

20. The information was displayed in a manner that I was able to perceive with minimum effort and appropriate precision. *

Mark only one oval.

| | | | | | | | | |
|-------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|----------------|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | |
| Strongly disagree | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | Strongly agree |

21. Comments

Learnability

The following 4 questions will address the learnability and intuitiveness of the visualisation.

22. I was able to gain new insights about how features are related to each other with the visualisation. *

Mark only one oval.

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | |
|-------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|----------------|
| Strongly disagree | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | Strongly agree |

23. Comments

24. The visualisation was easy to use. *

Mark only one oval.

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | |
|-------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|----------------|
| Strongly disagree | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | Strongly agree |

25. Comments

26. The visualisation was intuitive. *

Mark only one oval.

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | |
|-------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|----------------|
| Strongly disagree | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | Strongly agree |

27. Comments

28. I learnt how to use the visualisation quickly. *

Mark only one oval.

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | |
|-------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|----------------|
| Strongly disagree | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | Strongly agree |

29. Comments

Satisfaction

The following 4 questions will address the user satisfaction of the visualisation

30. I am satisfied with the visualisation. *

Mark only one oval.

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | |
|-------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|----------------|
| Strongly disagree | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | Strongly agree |

31. Comments

32. The visualisation works in the way I want it to work. *

Mark only one oval.

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | |
|-------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|----------------|
| Strongly disagree | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | Strongly agree |

33. Comments

34. The design of the visualisation is attractive. *

Mark only one oval.

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | |
|-------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|----------------|
| Strongly disagree | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | Strongly agree |

35. Comments

36. Visualising Importance and Dependencies in this way represents the data more clearly than the “traditional methods”. *

Mark only one oval.

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | |
|-------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|----------------|
| Strongly disagree | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | Strongly agree |

37. Comments

38. Did you like anything in particular about the visualisation? And if so, what?

39. What was difficult about this visualisation?

40. Do you have any comments on how to improve the visualisation?

41. Thank you for your participation!!

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