

Course Survey

This survey assessed participants' understanding of Machine Learning (ML) and Explainable AI (XAI) concepts before and after the course. The questions aimed to measure familiarity with ML techniques, confidence in applying models, awareness of bias and fairness, and the importance of explainability in AI. The results provide insights into key learning gaps and areas requiring further emphasis in future training sessions.

Pre-Course Survey

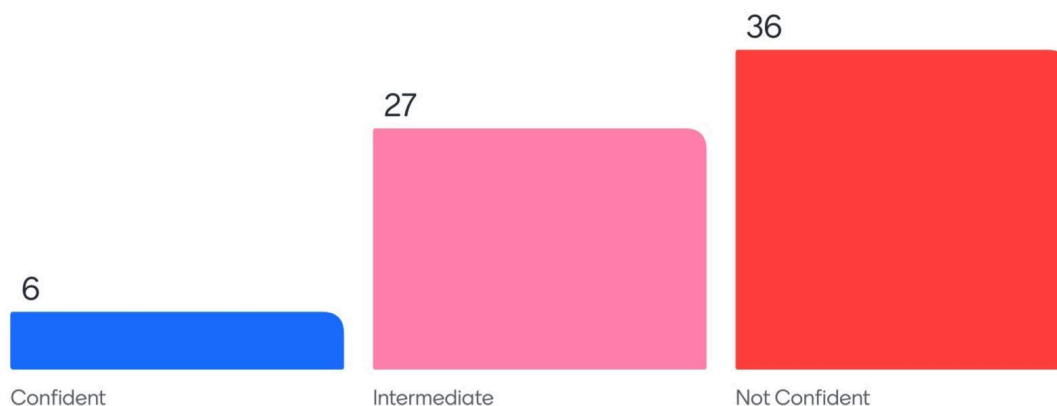
1. Understanding Python for ML

- Confident: 6 participants (10%)
- Intermediate: 27 participants (45%)
- Not confident: 36 participants (60%)

Insight:

Most participants are not confident in Python, suggesting a need for programming skill development in ML.

What is your experience level with Python?



2. Experience with ML Libraries (Scikit-learn, TensorFlow, etc.)

- Yes: 6 participants (9%)
- No: 54 participants (91%)

Insight:

Most participants have no experience with ML libraries, indicating a need for foundational training.

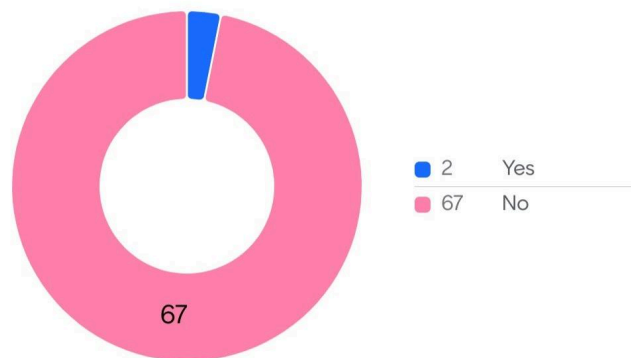
3. Hands-on ML Project Experience

- Yes: 2 participants (3%)
- No: 58 participants (97%)

Insight:

Very few participants have worked on ML projects, suggesting that practical exercises should be prioritized.

Have you ever worked on any hands-on ML projects before?



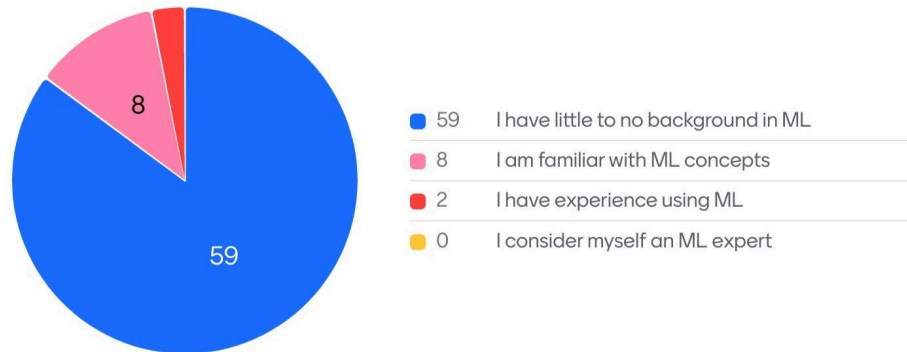
4. Confidence in Applying ML Models

- Not confident at all: 24 participants (35%)
- Slightly confident: 52 participants (52%)
- Moderately confident: 16 participants (16%)
- Very confident: 8 participants (8%)

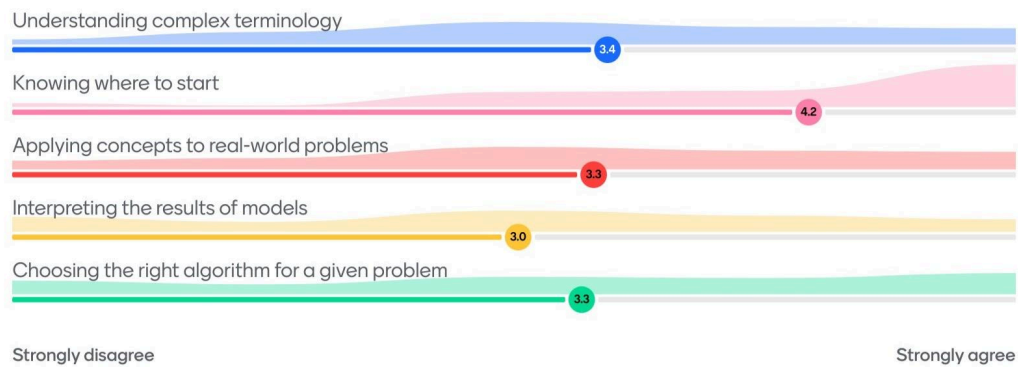
Insight:

While some participants feel slightly or moderately confident, additional hands-on training could improve their confidence further.

How confident do you feel about your knowledge of machine learning?



What do you think is the biggest challenge for beginners in learning machine learning?



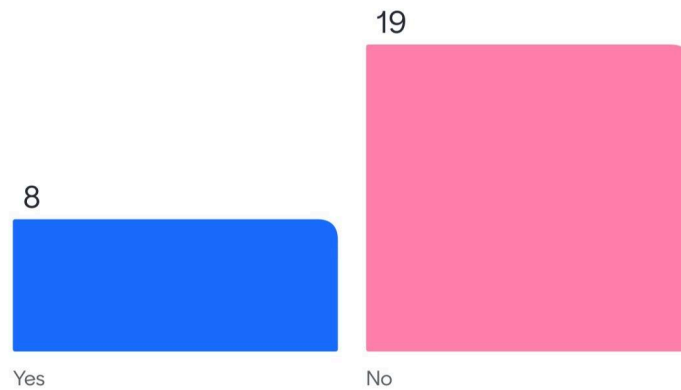
5. ML Applicability to Large Datasets

- Yes: 15 participants (30%)
- No: 45 participants (70%)

Insight:

A majority understand that ML is not limited to large datasets, indicating a good conceptual grasp of ML scalability.

Do you agree with the following statement? "Machine learning is only applicable to large datasets."



6. Familiarity with Supervised and Unsupervised Learning

- Yes: 40 participants (67%)
- No: 20 participants (33%)

Insight:

Most participants are familiar with basic ML paradigms, but further clarification on practical use cases is required.

7. Understanding of Overfitting and Underfitting

- Yes: 30 participants (50%)
- No: 30 participants (50%)

Insight:

Half of the participants need further explanation on model generalization and validation techniques.

8. Awareness of Cross-validation Techniques

- Yes: 18 participants (30%)
- No: 42 participants (70%)

Insight:

There is a significant gap in understanding model validation strategies, which should be emphasized in training.

9. Use of Data Preprocessing Techniques (Scaling, Encoding, Imputation, etc.)

- Yes: 20 participants (33%)
- No: 40 participants (67%)

Insight:

Most participants need more exposure to data preprocessing techniques to enhance model performance.

10. Importance of Feature Engineering in ML Models

- Yes: 56 participants (93%)
- No: 4 participants (7%)

Insight:

Most participants recognize the role of feature engineering in improving model accuracy, which is a positive indicator.

After the Model Building Survey

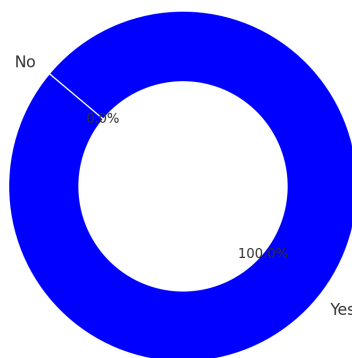
11. Importance of Feature Selection on Model Performance

- Yes: 100%
- No: 0%

Insight:

Unanimous agreement on the importance of feature selection, demonstrating awareness of data preprocessing significance.

Importance of Feature Selection on Model Performance



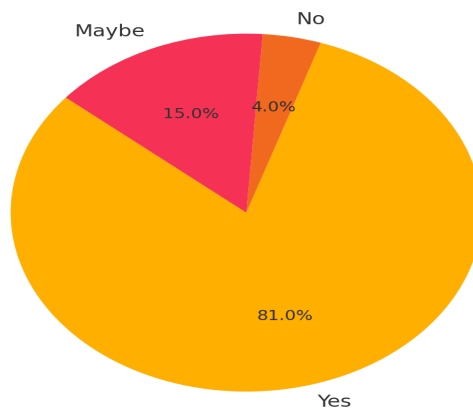
12. Impact of Diverse Training Data on Model Performance

- Yes: 81%
- No: 4%
- Maybe: 15%

Insight:

Most participants understand the role of diverse training data, though some uncertainty remains.

Impact of Diverse Training Data



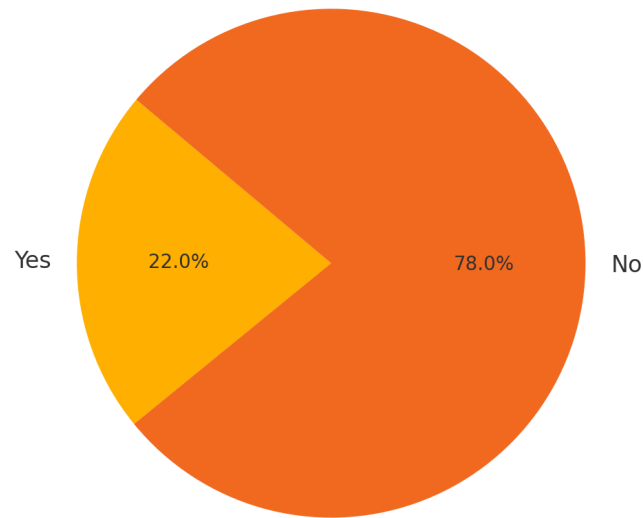
13. Complexity of Neural Networks vs Simpler Models

- Yes: 22%
- No: 78%

Insight:

A majority recognize that complexity does not always equate to better performance, showing awareness of model selection strategies.

Complexity of Neural Networks vs Simpler Models



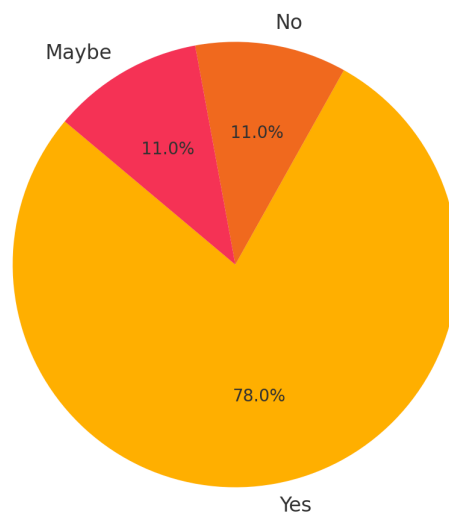
14. Understanding ML Model Workings

- Yes: 78%
- No: 11%
- Maybe: 11%

Insight:

Most participants understand ML models as essential, but a small group remains uncertain.

Understanding ML Model Workings



Which factor do you think is most important when choosing a machine learning model?



Which stage of the ML pipeline do you find the most challenging?



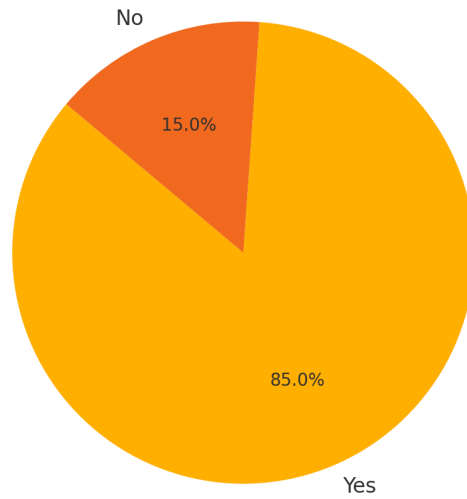
15. Concern About Bias in ML Models

- Yes: 85%
- No: 15%

Insight:

A strong majority recognizes bias as a significant issue, reinforcing the need for fairness considerations.

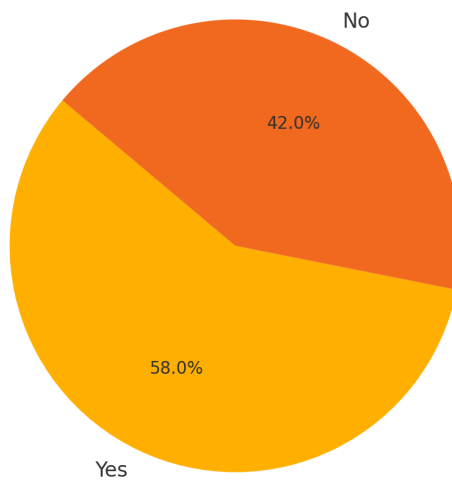
Concern About Bias in ML Models



16. Awareness of AI Ethics Principles

- Yes: 35 participants (58%)
- No: 25 participants (42%)

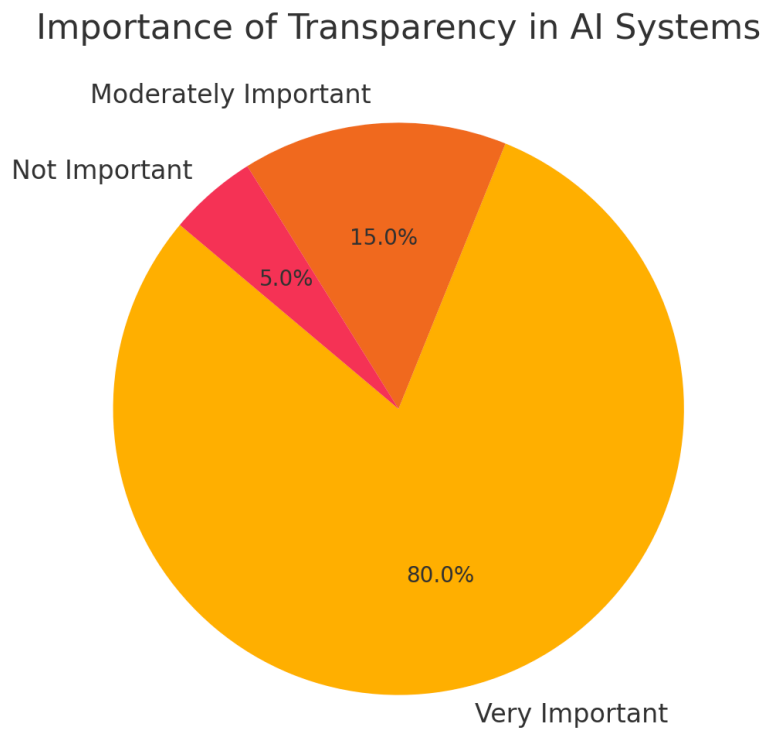
Awareness of AI Ethics Principles



17. Importance of Transparency in AI Systems

- Very Important: 80%
- Moderately Important: 15%

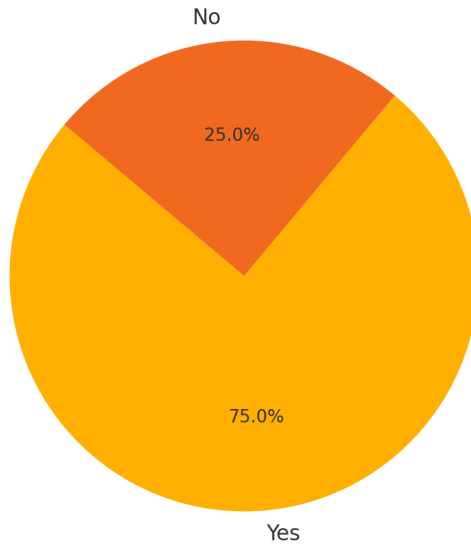
- Not Important: 5%



18. Understanding of Accountability in AI Decisions

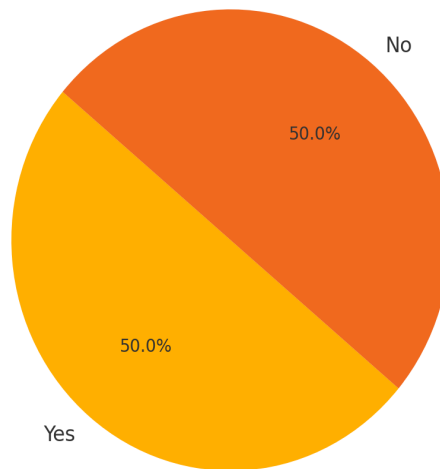
- Yes: 45 participants (75%)
- No: 15 participants (25%)

Understanding of Accountability in AI Decisions



19. Knowledge of Regulatory Frameworks in AI

Knowledge of Regulatory Frameworks in AI



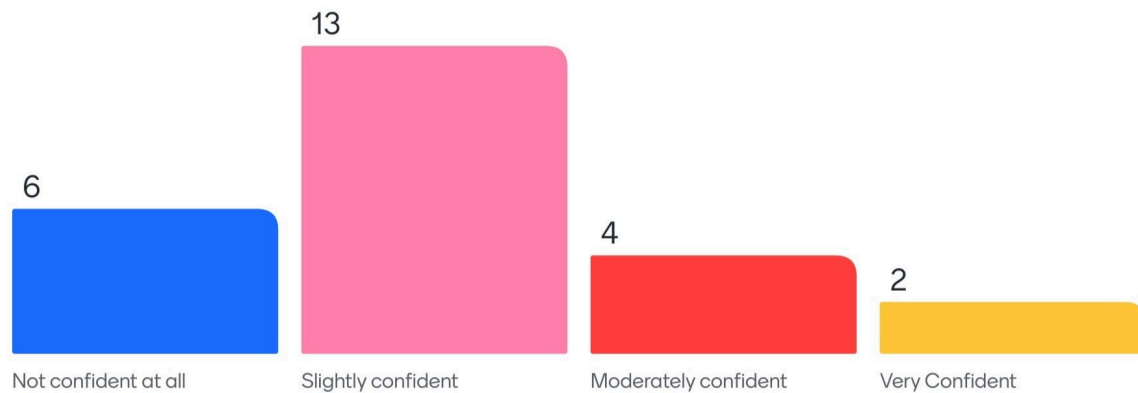
- Yes: 30 participants (50%)
- No: 30 participants (50%)

20. Confidence in Identifying Bias in AI Models

- Not confident: 40%
- Slightly confident: 35%
- Moderately confident: 20%

- Very confident: 5%

After this session, how confident do you feel in applying a machine-learning model for a given problem?

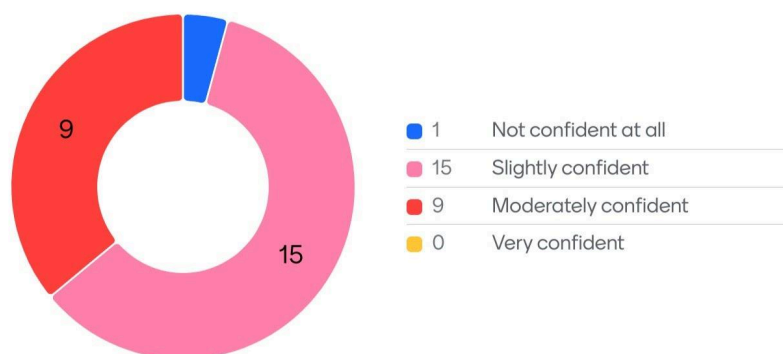


Post Course Survey

21. Awareness of Bias Mitigation Techniques

- Yes: 25 participants (42%)
- No: 35 participants (58%)

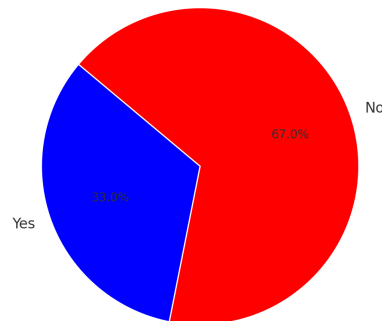
After attending the course, how confident are you in identifying potential biases in machine learning projects?



22. Familiarity with XAI Techniques (SHAP, LIME, etc.)

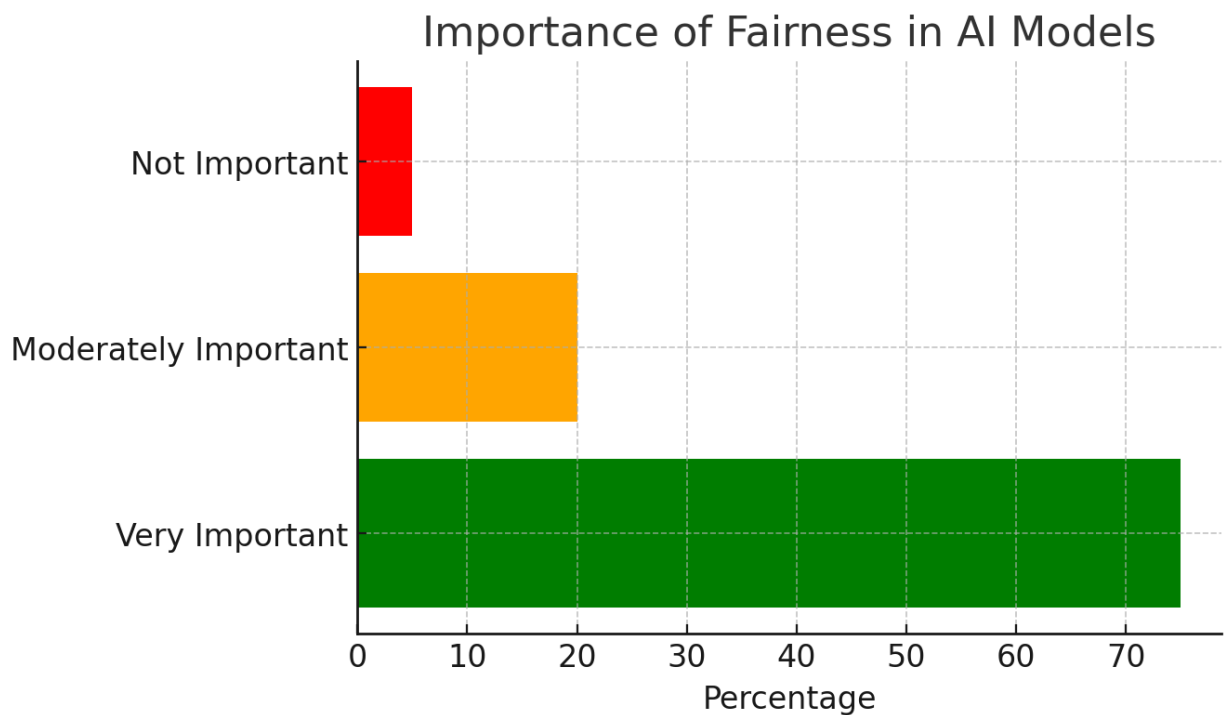
- Yes: 20 participants (33%)
- No: 40 participants (67%)

Familiarity with XAI Techniques (SHAP, LIME, etc.)



23. Importance of Fairness in AI Models

- Very Important: 75%
- Moderately Important: 20%
- Not Important: 5%



24. Understanding of Model Interpretability Challenges

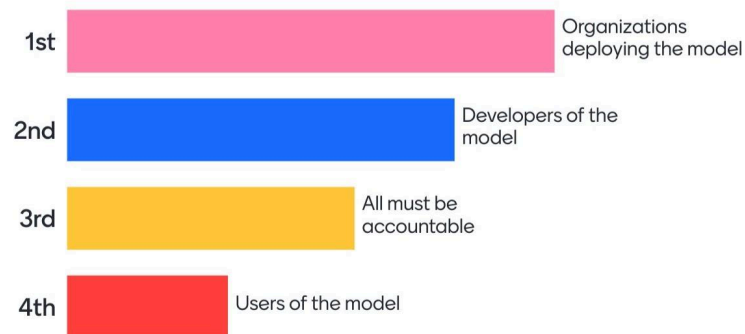
- Yes: 30 participants (50%)

- No: 30 participants (50%)

25. Awareness of Real-World AI Failures Due to Bias

- Yes: 40 participants (67%)
- No: 20 participants (33%)

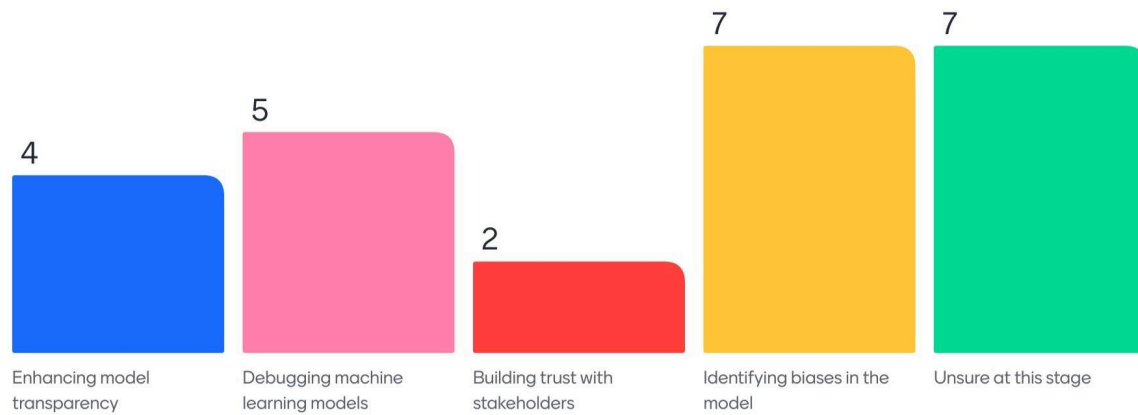
In your opinion, who should be held accountable when a machine learning model causes harm or makes an incorrect decision?



26. Confidence in Applying XAI Techniques After the Course

- Low: 20%
- Moderate: 50%
- High: 30%

Which aspect of XAI do you think will be most useful in your future projects?



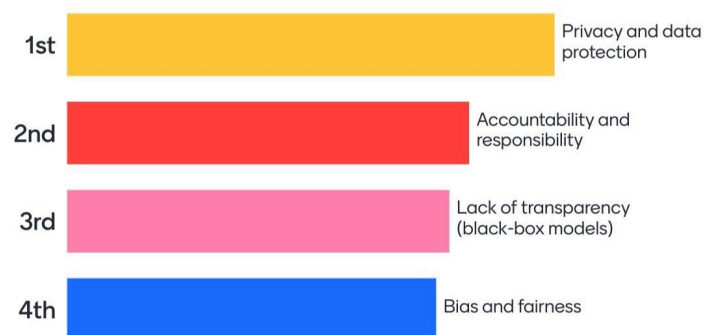
27. Ability to Explain AI Model Decisions After Training

- Yes: 45%
- No: 55%

28. Understanding of Ethical AI Implementation

- Yes: 60%
- No: 40%

Which ethical issues in machine learning do you find most concerning?



29. Impact of XAI Training on AI Trustworthiness Awareness

- Significant: 70%

- Minimal: 30%

Which of the following statements best describes your view on the role of XAI in AI systems?



30. Overall Satisfaction with the XAI Course

- Satisfied: 80%
 - Neutral: 15%
 - Unsatisfied: 5%
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