Code System

Code System	Memo	Frequency
Code System		293
Interaction	Comments on feature interaction	21
Explainability purposes	Why do participants use ML explainability techniques like PDP and ICE plots? What are they interested in?	0
Guiding feature engineering		1
Understanding feature-outcome relationships	Trends between features and the model's output. Are the feature-outcome relationships intuitive?	11
Understanding feature importance		2
Identifying interactions		2
Sensitivity analysis		2
Model monitoring		1
Understanding null values		2
Explainability techniques	The participants' current techniques for ML explainability.	0
Convention and familiarity		4
Describing differences between clusters		2
Residual analysis	Performing residual analysis, such as using surrogate decision trees.	4
SHAP		6
ALE		2
Marginal plots		2
Pain point in comparing and understanding different types of plots		1
Uses scatter plots to identify interactions		3
Don't go in depth on interactions		5
Comparing feature vs. label plots for training and validation		1
PDP/ICE	These codes cover participants' current usage of PDP and ICE plots.	0
Don't primarily look at two-way plots		6
Uses ICE plots, but not PDPs		1
Does not use PDPs or ICE plots		2
Uses PDPs and ICE plots		2
Uses PDPs but not ICE plots		3
Which features to look at	These codes are about how the participants determine which features to examine in their current ML explainability techniques.	0
Already have features in mind		2
Earth mover's distance		1
Most important features		6
Comparing different types of plots for the same feature		1
Explores correlated features		1
No good approach to determing which plots to look at		1
PDPilot General Usage	This collection of codes is for general information about participants' experience using PDPilot, without being specific to a particular technique or part of the tool.	0
Over-reliance on guidance		1
Couldn't find use for technique	The participant did not find a situation to use a particular technique, even if they expected that technique to be useful	4
Didn't know how to do something in PDPilot	The participant did not know how to do something in PDPilot or forgot or misunderstood how a technique works.	7
Tool complexity		11
PDPilot Techniques Usage	These codes are about how participants used PDPilot, with an emphasis on the ranking, filtering, and clustering.	0
Interactions	These codes are for how PDPilot supports analyzing interactions, apart from the technique specific codes above.	0
Not very useful		1
Good for analyzing interactions		3
Liked interaction plots		2
Ranking	These codes are specific to the different ranking metrics.	0
Liked importance ranking		7
Liked cluster difference		1
Didn't use cluster difference		3
Highlighting was useful	This code applies to comments on the usefulness of brushing ICE lines.	10
Liked highlighted line similarity		3
Didn't use highlighted line similarity		5
Liked highlighted histogram difference		4
Didn't use highlighted histogram difference		2
Did not find sorting by interactions to be useful		1
Filtering	These codes apply to filtering, though participants did not talk much about filtering by shape.	0
Filtering was useful	Comments about the usefulness of filtering, though not specific to filtering by shape.	5
Filtering by shape		1
Liked two-way filters		3
Didn't use one-way filters		1
Clustering	These codes apply to clustering and comparisons between using the cluster descriptions vs. brushing and the ranking metrics.	0
Clusters and cluster descriptions were useful		4
Prefered highlighting over clusters		3
Prefered clusters over highlighting		1
PDPilot improvements	This group of codes is for suggestions and ideas for how to improve PDPilot.	0
Outliers, overfitting, and skewed distributions	These codes deal with concerns and strategies about dealing with outliers, skewed feature distributions, and the model overfitting.	0
Problem with few instances		3
Outliers affecting rankings		4
Removing outliers		3
Excluding features		1
Iterative approach to handling overfitting		2
Weighting metrics by data distribution		3
Concerned about correlated variables		3
Are plots trustworthy		1
Alternative to two-way scatter plot		1
Using different importance metric		3
Visualization sizing issue		5
Saving and exporting findings		2
Confused by cluster description stacked bar chart		2
Easier to highlight clusters		2
Incorporating information about errors		6
Handling null values		1
Study limitations	These codes are for issues that reflect limitations in the user study design.	0
Uninteresting dataset		3
Unfamiliar dataset		3
Didn't have a goal in mind		4
Benefits of PDPilot	Benefits of PDPilot and general compliments.	0
Exploratory vs. hypothesis driven approach		6
Pre-computed		1
Compliment		17
Creating plots by hand		2
Better at identifying heterogenous trends		2
Anonymize	Code to anonymize segments.	32