Supplementary Material: Using Dynamic and Contextual Features to Predict Issue Lifetime in GitHub Projects

1 All features considered

Table 1 lists features that were removed from the initial set of features due to low predictive power and correlations.

Table 1: Features extracted for each issue. Suffix "T" (short for "Time") in the feature name denotes that this feature is dependent on the observation point.

Feature	**Description**	Reason
Issue features		
nDemilestoningT	Number of times issue milestone tag was removed	
nMilestonedByT	Number of times milestone was set	
nRenamedT	Number of times issue was renamed	
nUnassingedByT	Number of times issue was unassigned	
nUnlabeledT	Number of times a label was removed	
issueBodyLen	Length of the raw contents (markdown) of the issue content body text	Correlation
issueTitleLen	Length of the raw contents (markdown) of the issue title text	Correlation
sumCommentSizeT	Total comment size of the comments received before the observation point	Correlation
nPersonsMentionedBody	Number of persons mentioned (using @mentions) in the issue body text	
nCommitsMentiondBody	Number of commits mentioned in the issue body text	
nIssuesMentiondBody	Number of issues referenced (using #issueId or user/project#issueId convention) in the issue body text	
nCodeBlocksInConet	Number of code sections in the issue body text	
Issue submitter features		
nCommitsByCreatorProjects	Number of different repositories committed to	
Participant's features		
nPersonCommitingInProject	Number of unique persons committing in the project	
nCommitsProjectT	Number of unique committers in the project within two week of observation point	

2 Feature importance for all models

Figures 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28

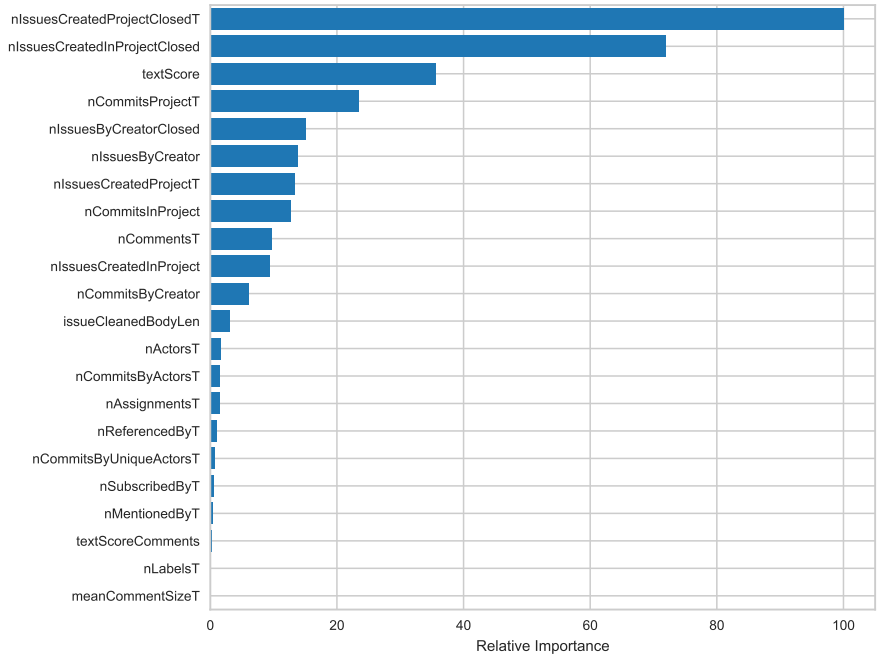

Figure 1: Feature importance for model trained at 0 days, prediction horizon 1 days

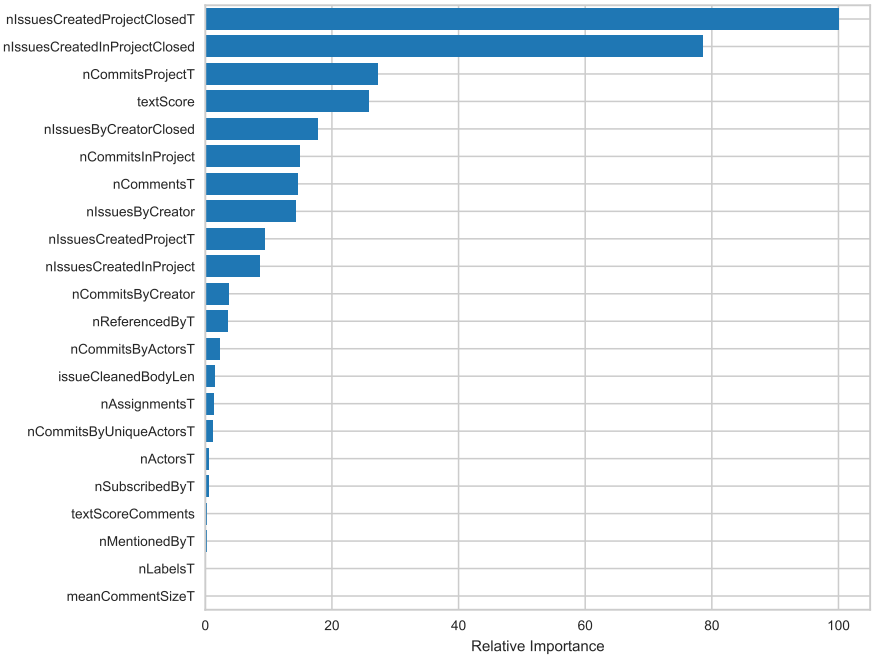

Figure 2: Feature importance for model trained at 0 days, prediction horizon 7 days

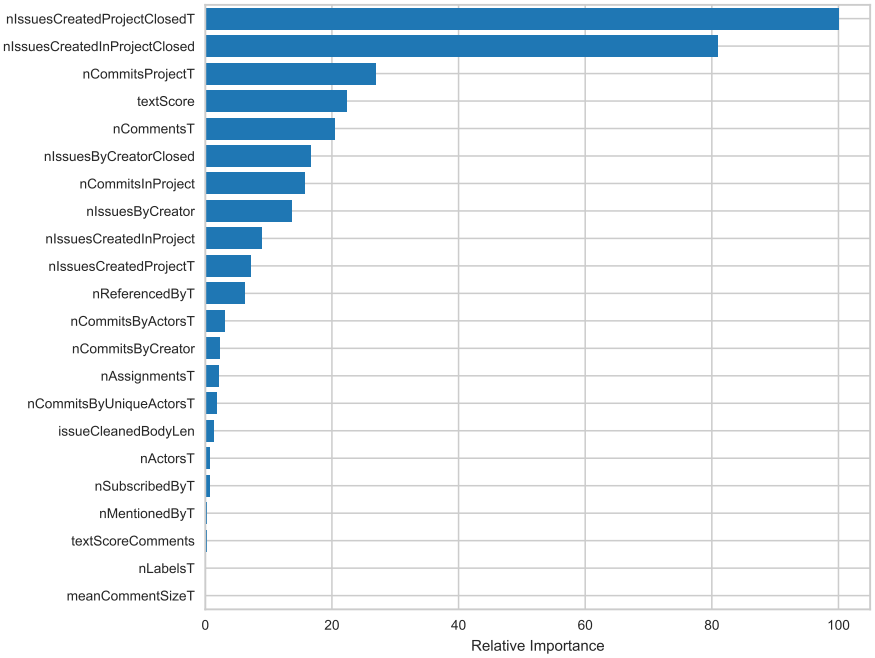

Figure 3: Feature importance for model trained at 0 days, prediction horizon 14 days

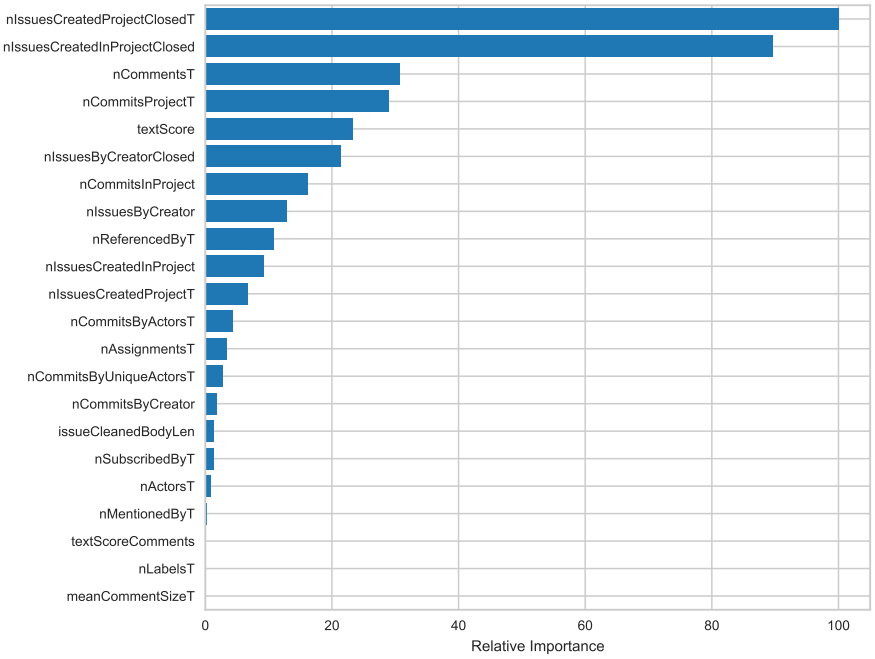

Figure 4: Feature importance for model trained at 0 days, prediction horizon 30 days

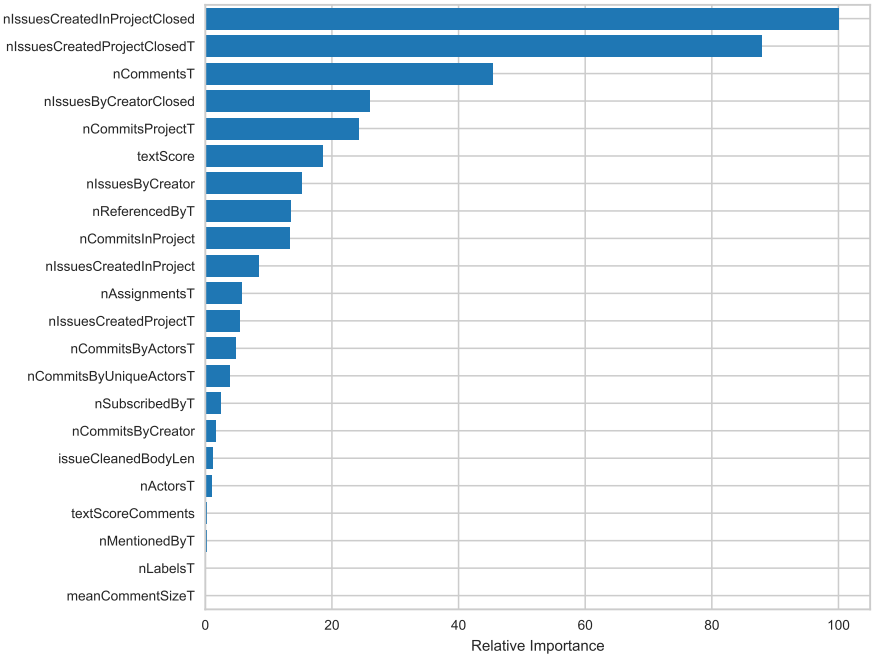

Figure 5: Feature importance for model trained at 0 days, prediction horizon 90 days

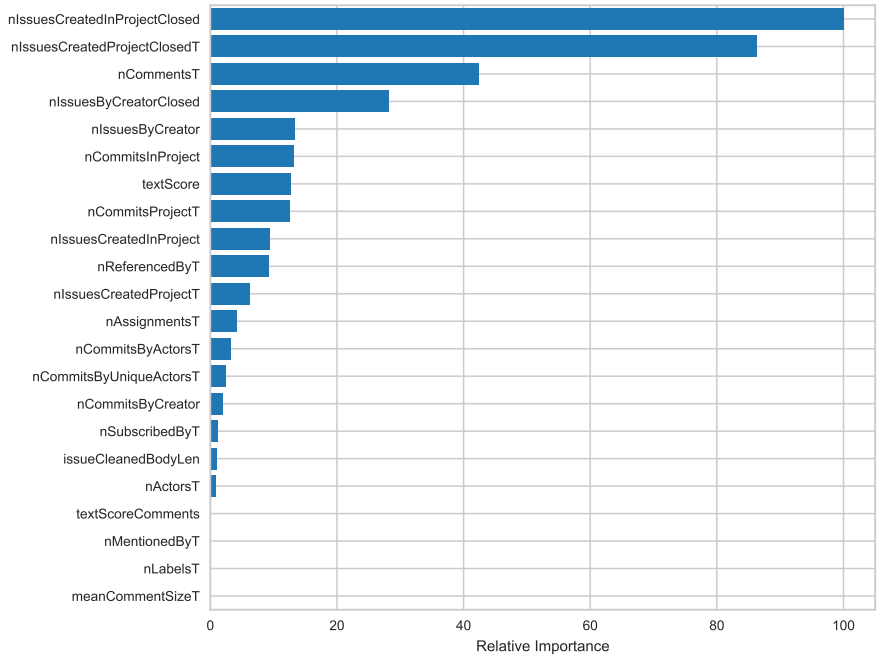

Figure 6: Feature importance for model trained at 0 days, prediction horizon 180 days

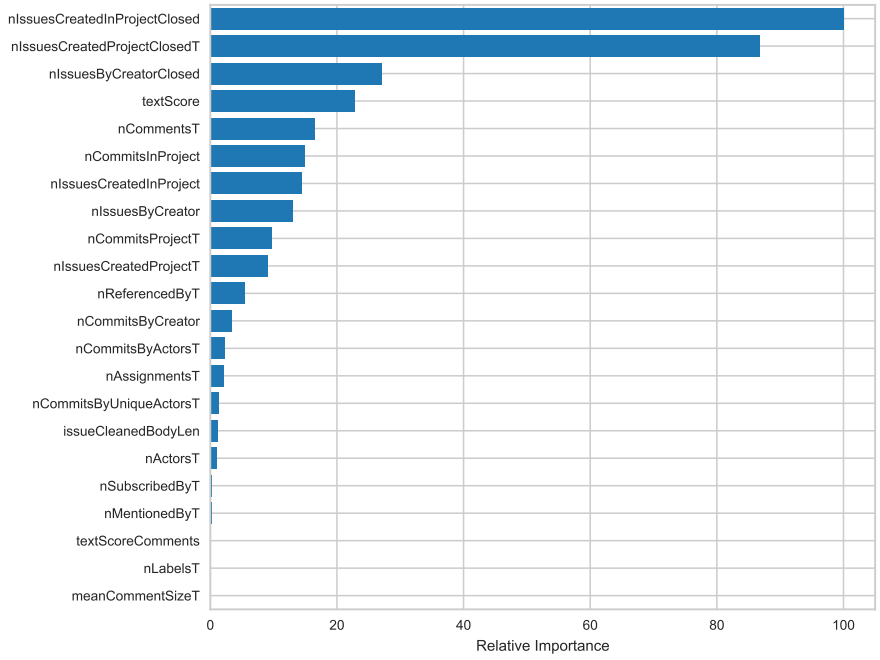

Figure 7: Feature importance for model trained at 0 days, prediction horizon 365 days

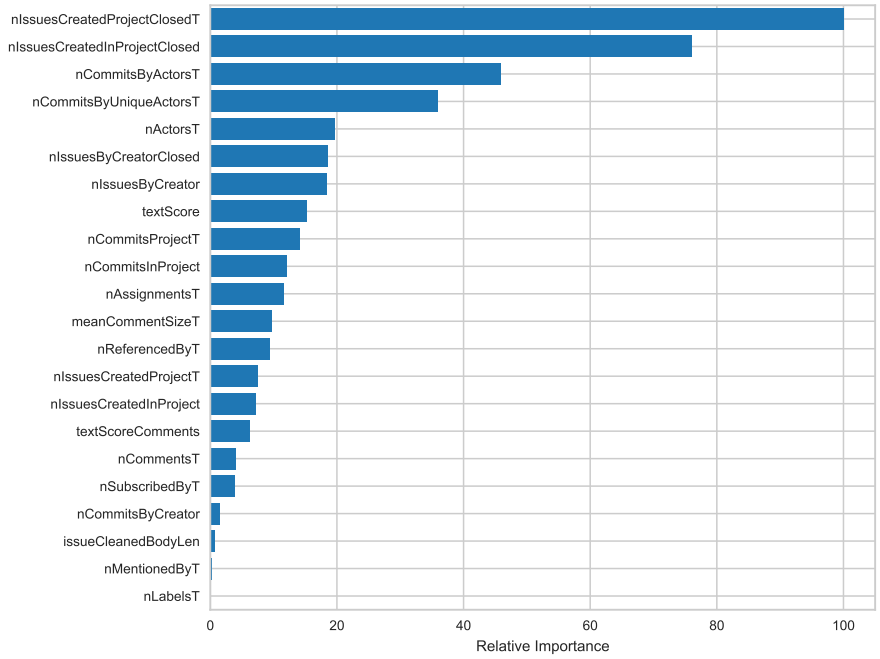

Figure 8: Feature importance for model trained at 1 days, prediction horizon 7 days

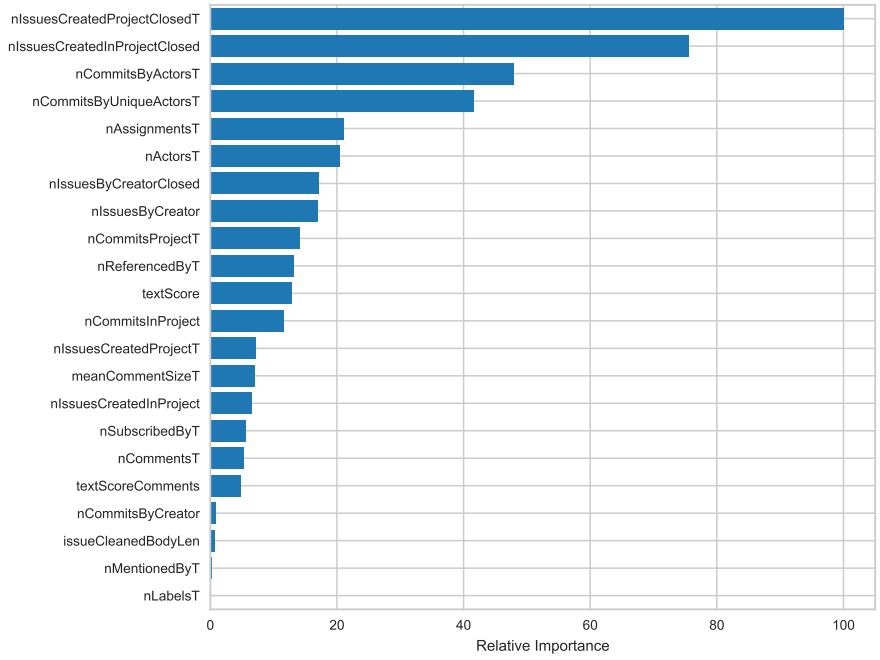

Figure 9: Feature importance for model trained at 1 days, prediction horizon 14 days

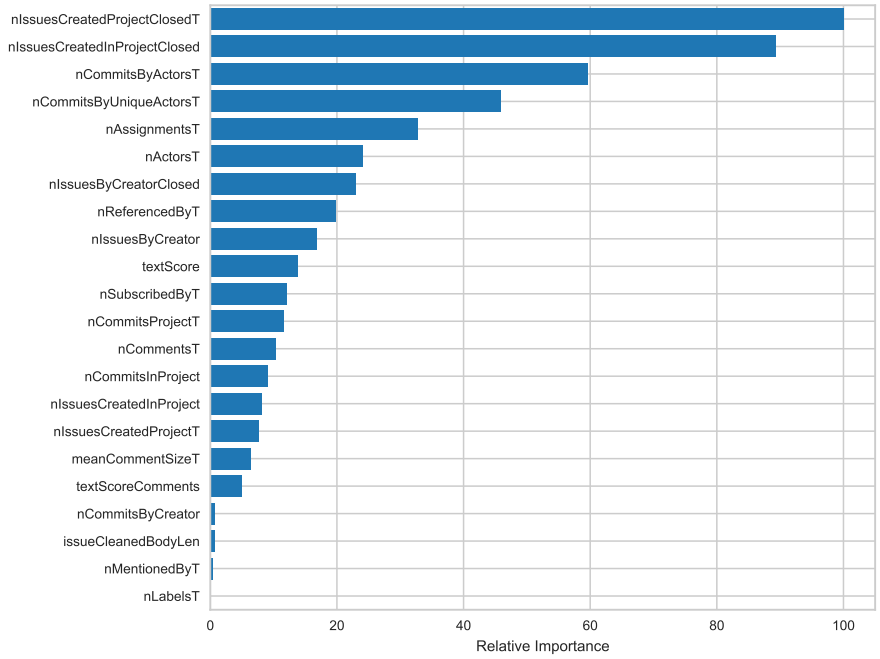

Figure 10: Feature importance for model trained at 1 days, prediction horizon 30 days

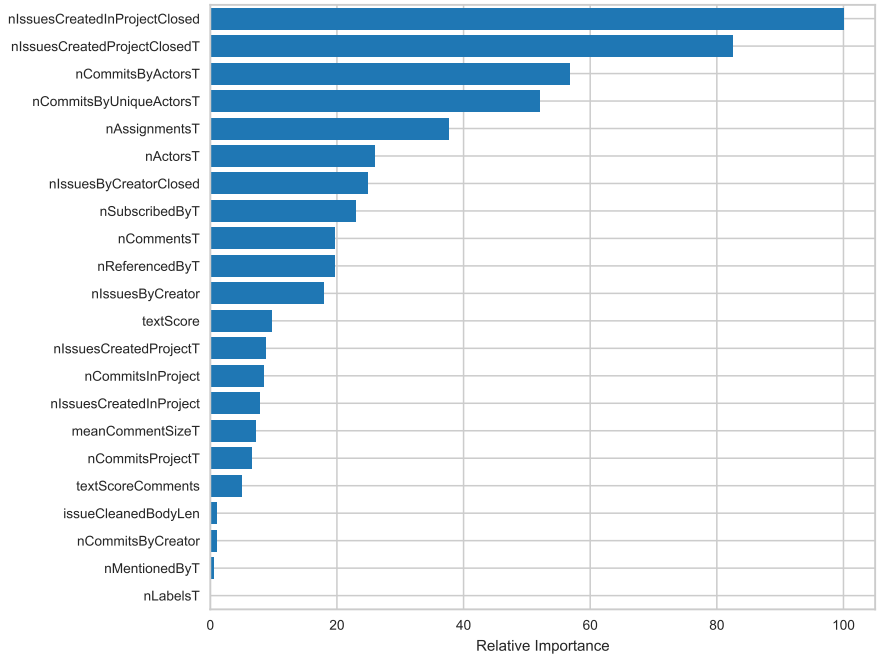

Figure 11: Feature importance for model trained at 1 days, prediction horizon 90 days

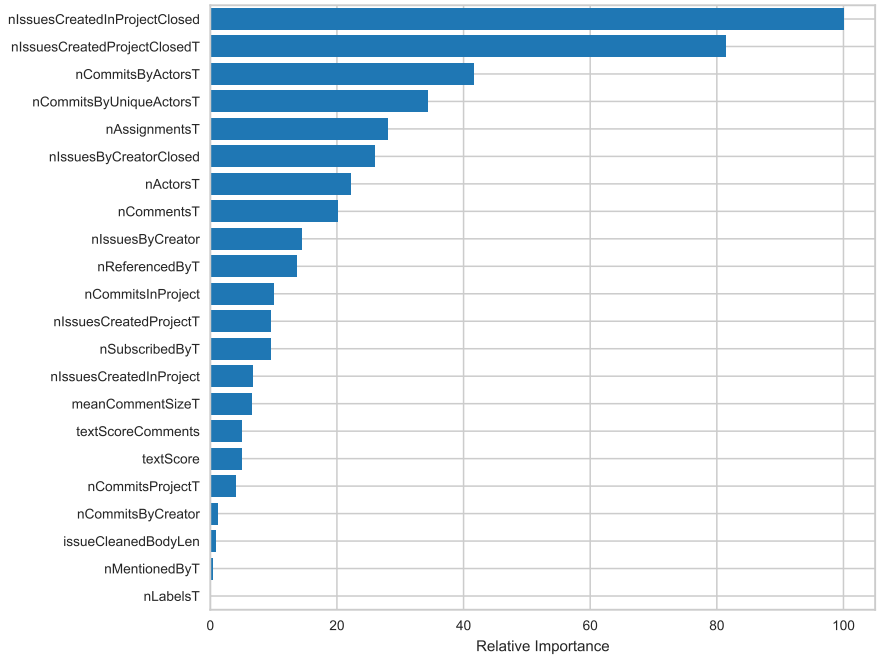

Figure 12: Feature importance for model trained at 1 days, prediction horizon 180 days

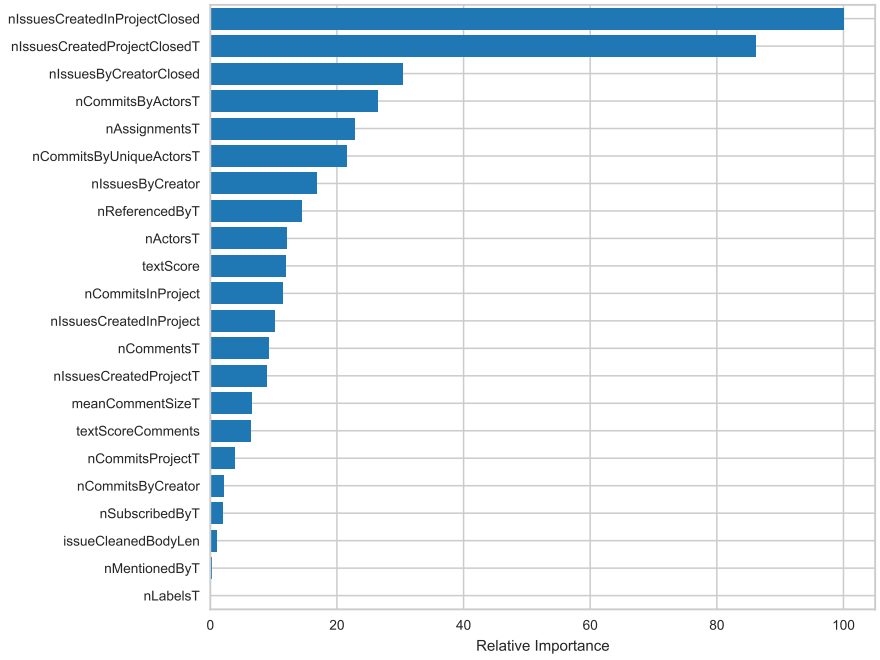

Figure 13: Feature importance for model trained at 1 days, prediction horizon 365 days

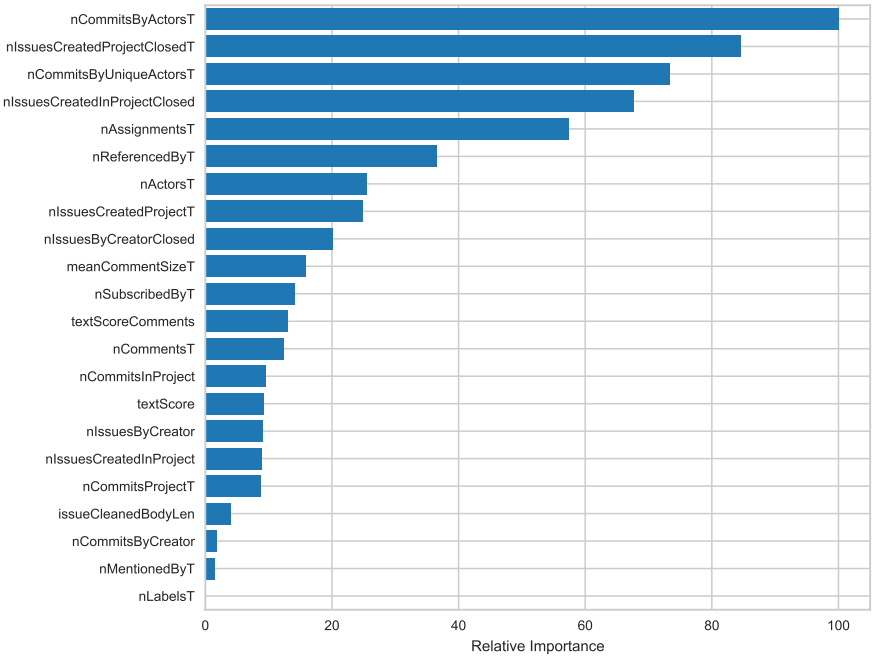

Figure 14: Feature importance for model trained at 7 days, prediction horizon 14 days

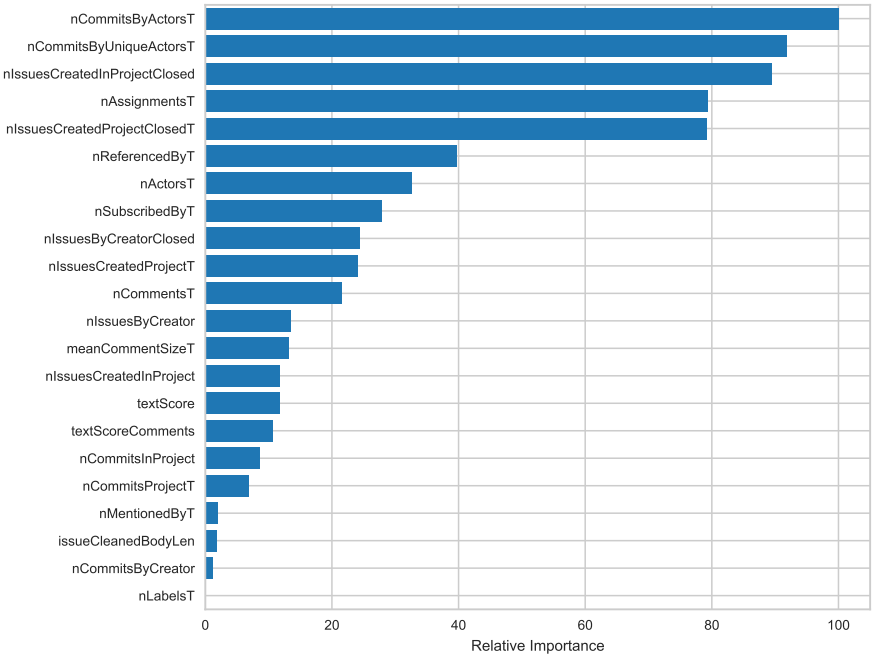

Figure 15: Feature importance for model trained at 7 days, prediction horizon 30 days

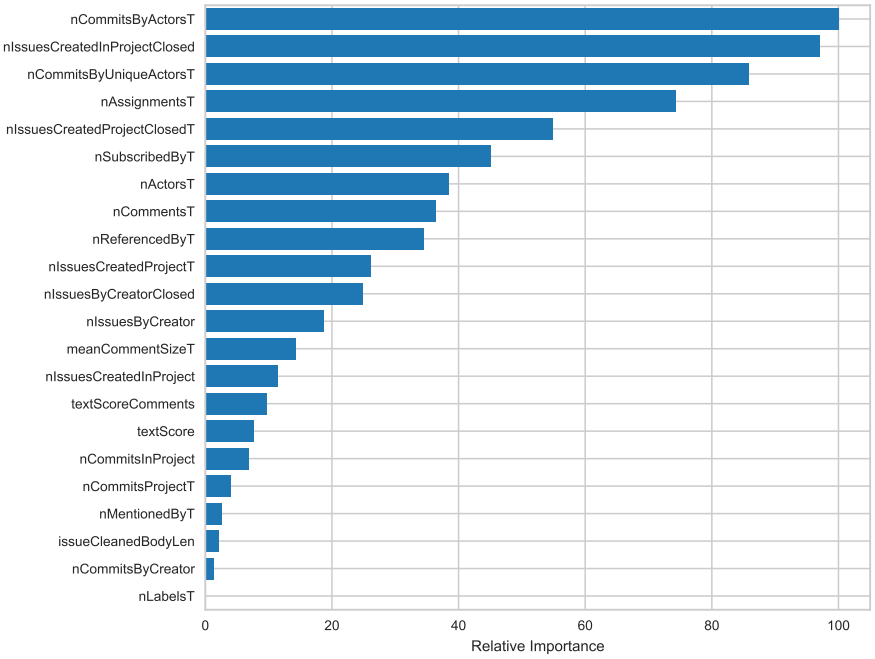

Figure 16: Feature importance for model trained at 7 days, prediction horizon 90 days

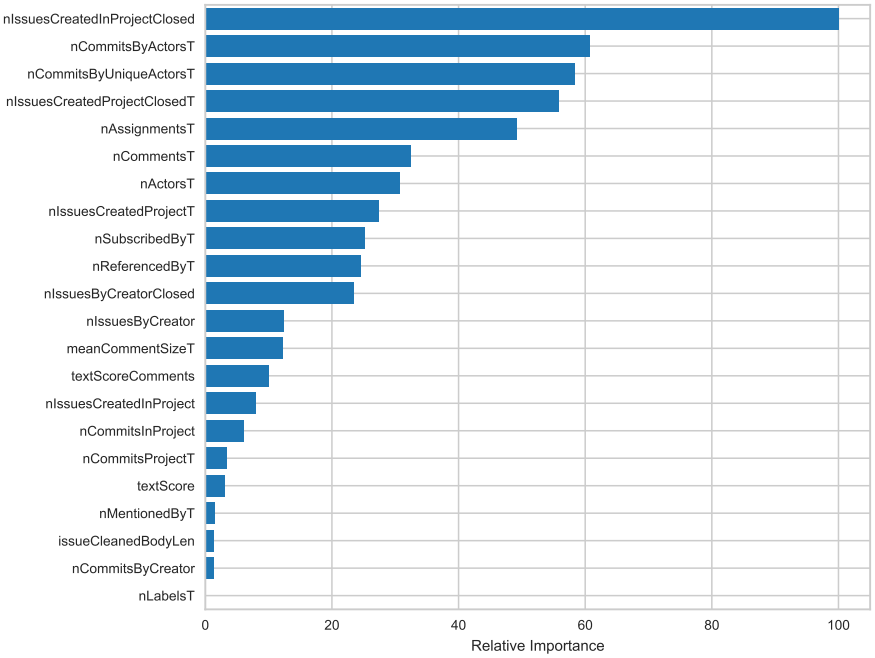

Figure 17: Feature importance for model trained at 7 days, prediction horizon 180 days

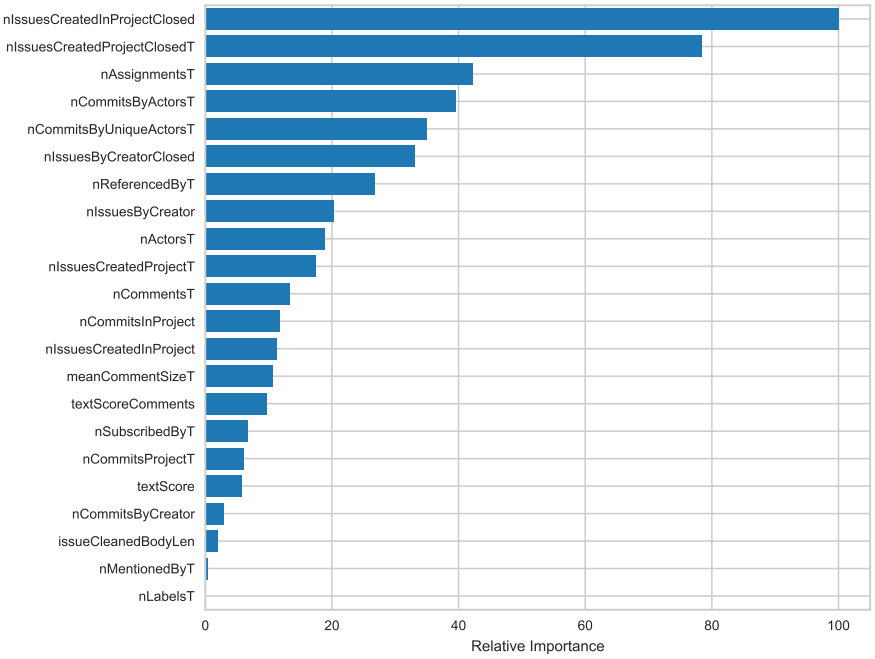

Figure 18: Feature importance for model trained at 7 days, prediction horizon 365 days

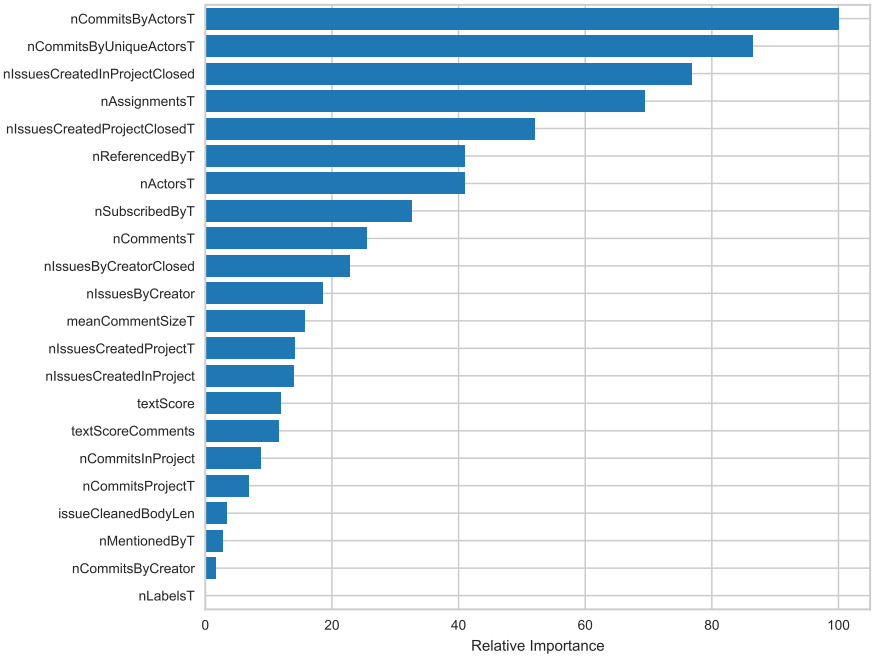

Figure 19: Feature importance for model trained at 14 days, prediction horizon 30 days

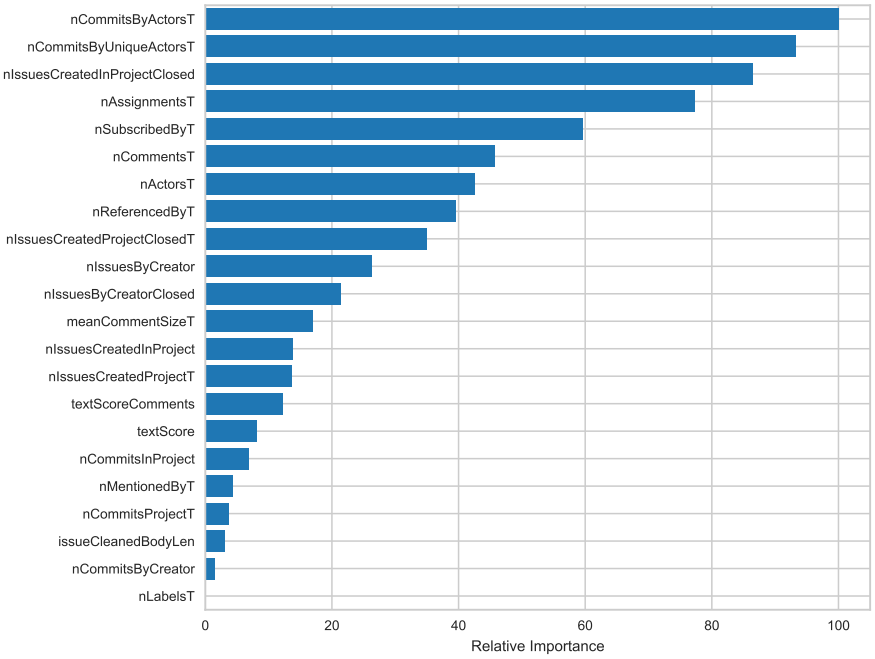

Figure 20: Feature importance for model trained at 14 days, prediction horizon 90 days

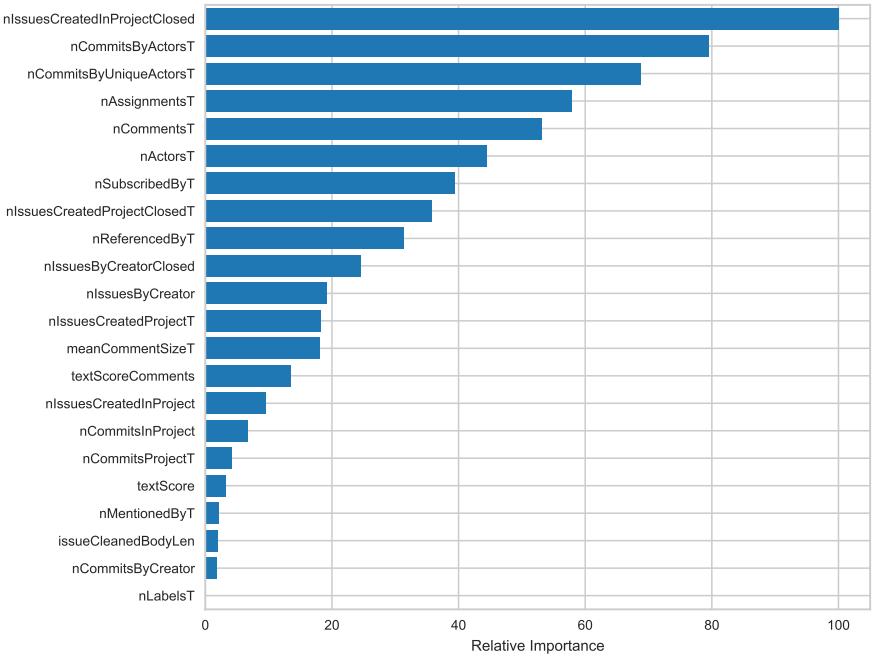

Figure 21: Feature importance for model trained at 14 days, prediction horizon 180 days

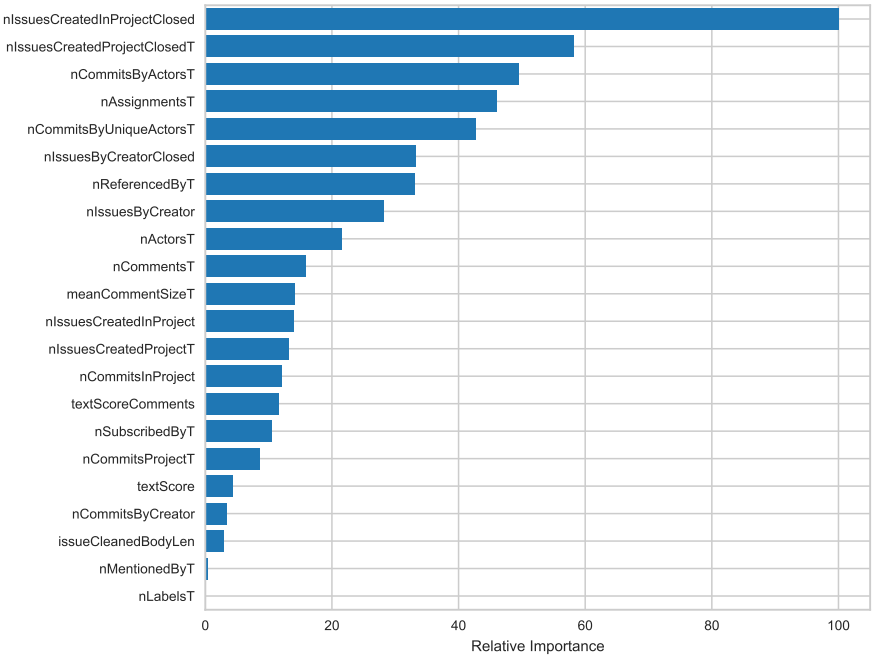

Figure 22: Feature importance for model trained at 14 days, prediction horizon 365 days

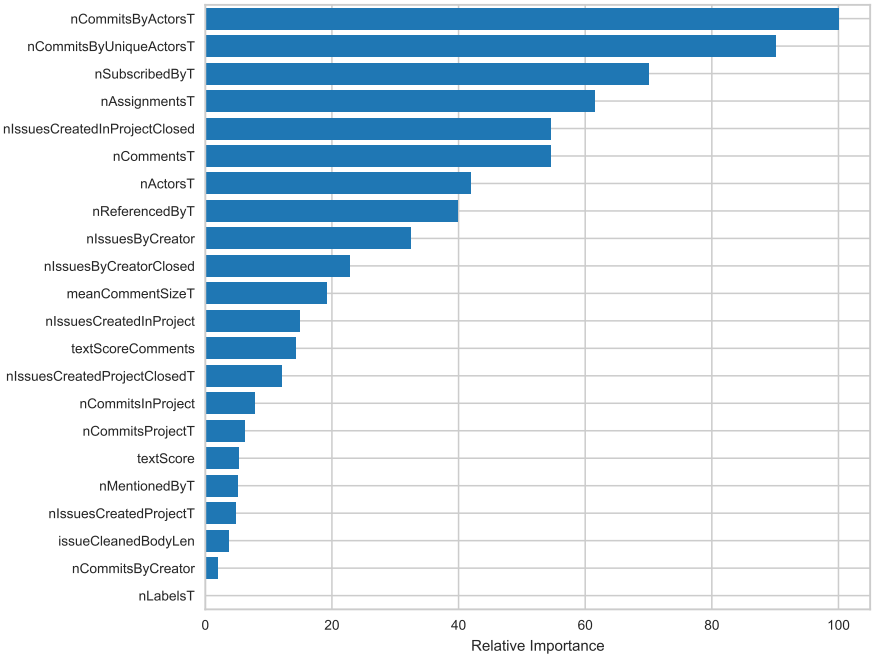

Figure 23: Feature importance for model trained at 30 days, prediction horizon 90 days

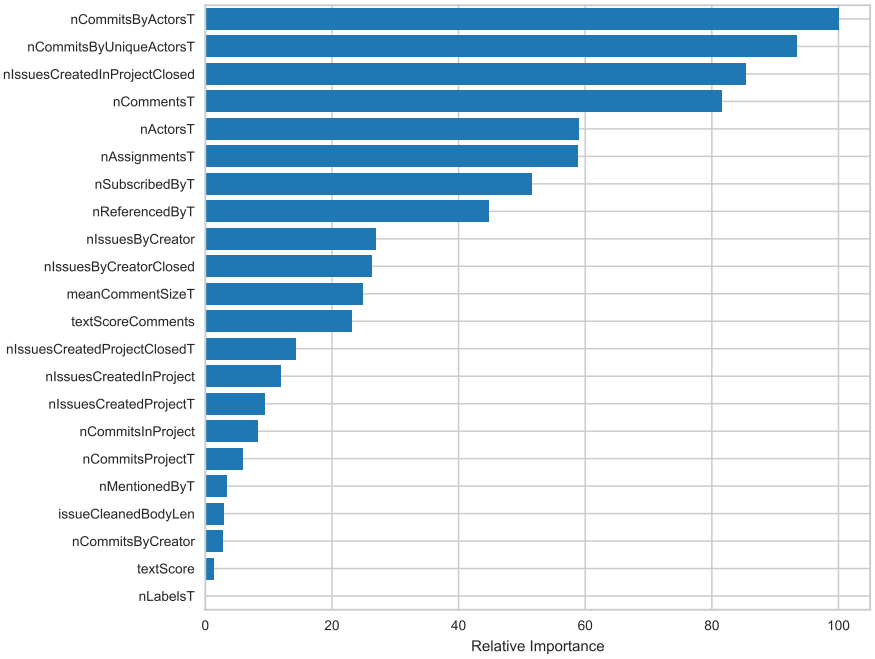

Figure 24: Feature importance for model trained at 30 days, prediction horizon 180 days

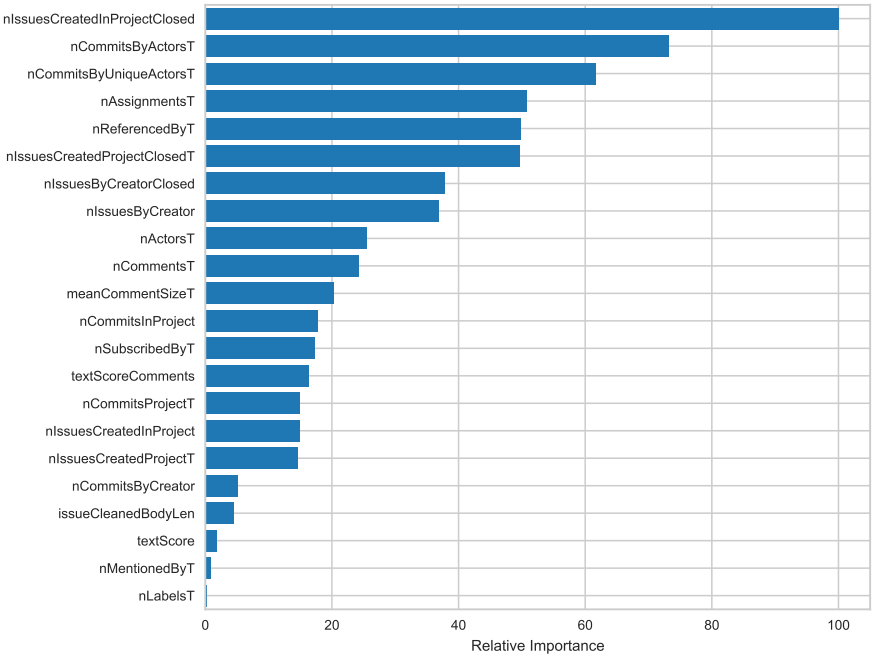

Figure 25: Feature importance for model trained at 30 days, prediction horizon 365 days

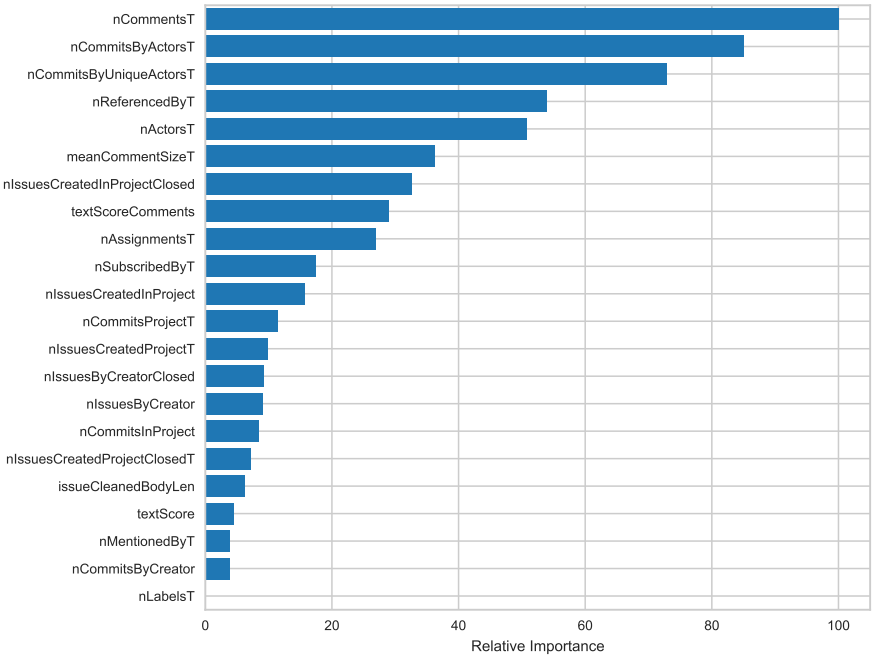

Figure 26: Feature importance for model trained at 90 days, prediction horizon 180 days

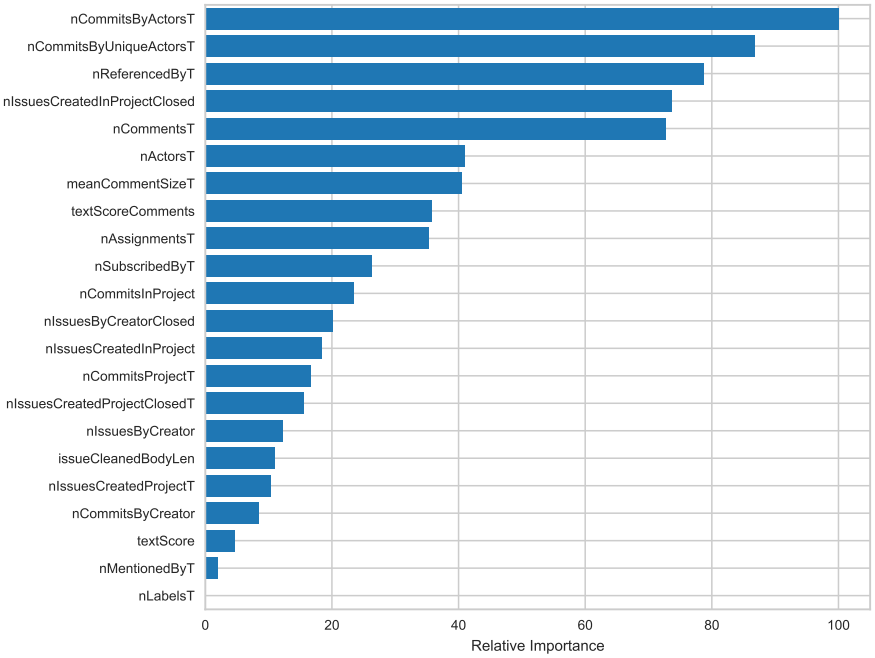

Figure 27: Feature importance for model trained at 90 days, prediction horizon 365 days

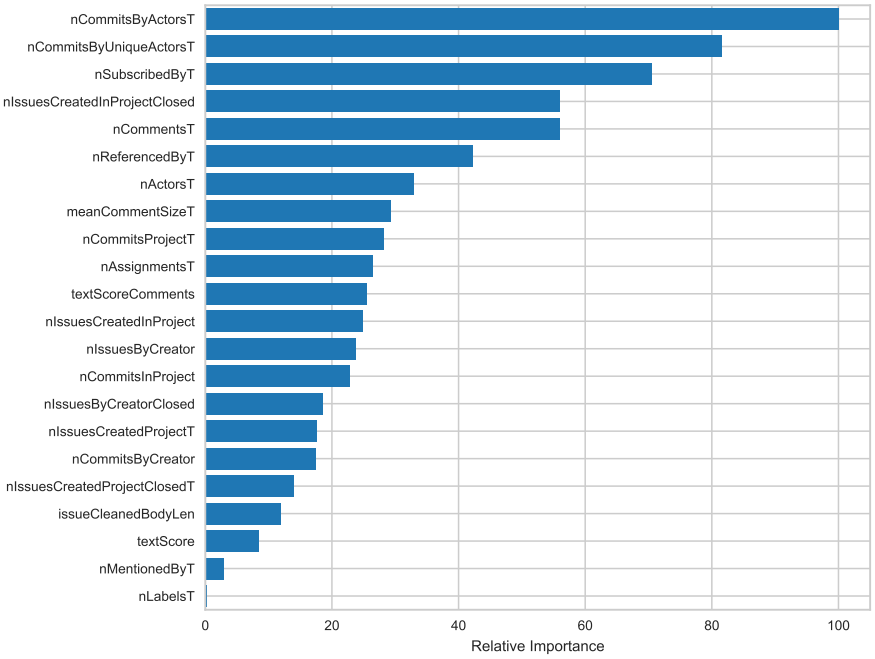

Figure 28: Feature importance for model trained at 180 days, prediction horizon 365 days