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Time variance and defect prediction in software projects: additional figures

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Time Variance and Defect Prediction in Software Projects

1.1 All Figures of Experiment 5.1

Figures 1.1–1.4 show the heat-maps of Eclipse, Mozilla, Netbeans and Open Office. These heat-maps show prediction quality variability when predicting bugs in one target period using different prediction models.

The maximum, minimum, mean, and variance of the AUC values as well as the histogram of AUC variance's in each *column* of the heat-maps (Figures 1.1–1.4) are shown in Figures 1.5–1.8.

Figures 1.9–1.12 show the variability in prediction quality when predicting bugs in different targets using the same model. The descriptive statistics of the AUC values in each *row* of these heat-maps are shown in Figures 1.13–1.16.

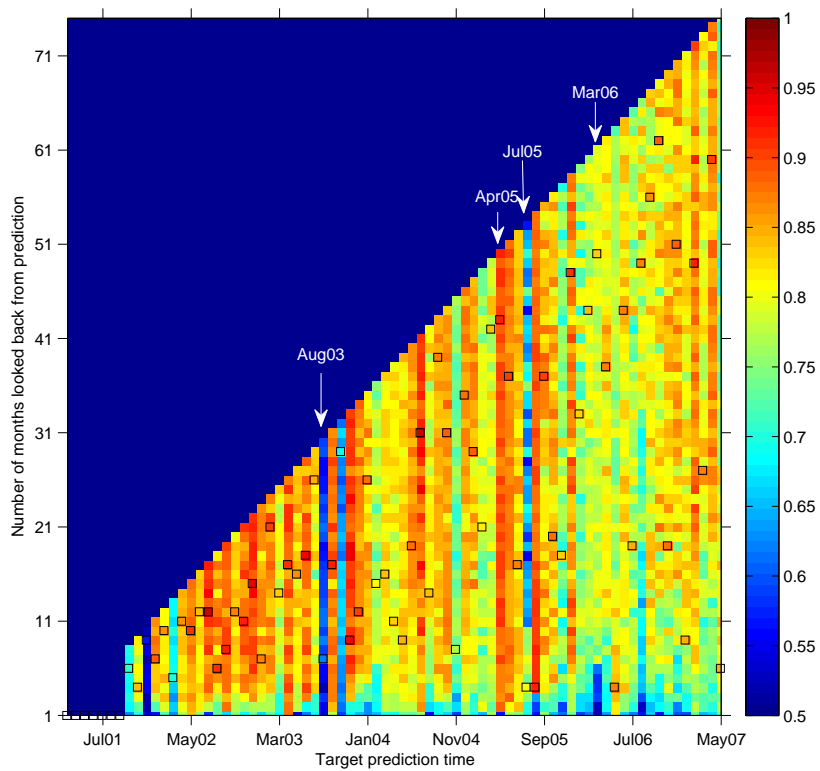


Figure 1.1: Eclipse heat-map: Prediction quality on same target using different training periods with the point of highest AUC highlighted

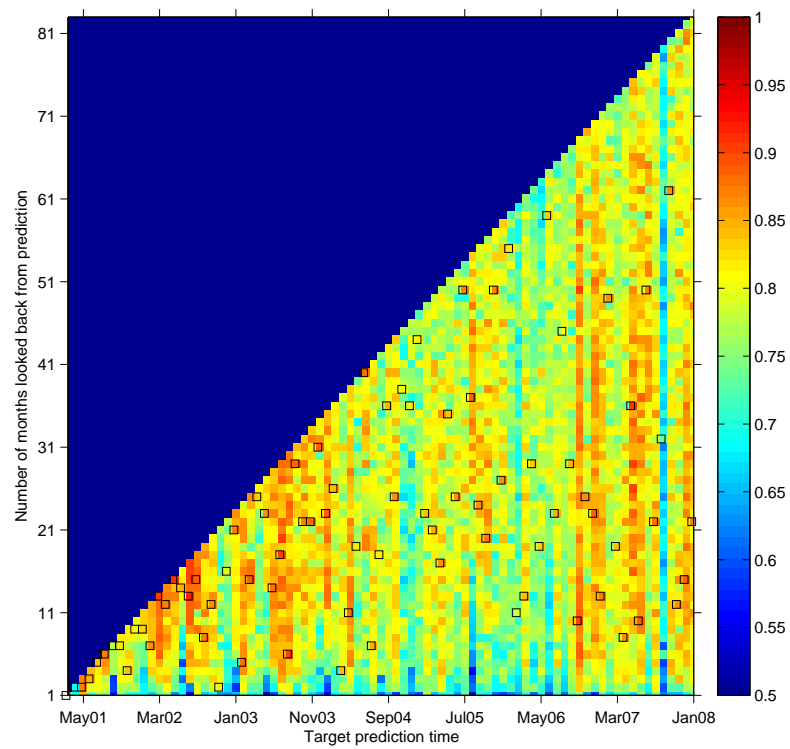


Figure 1.2: Mozilla heat-map: Prediction quality on same target using different training periods with the point of highest AUC highlighted

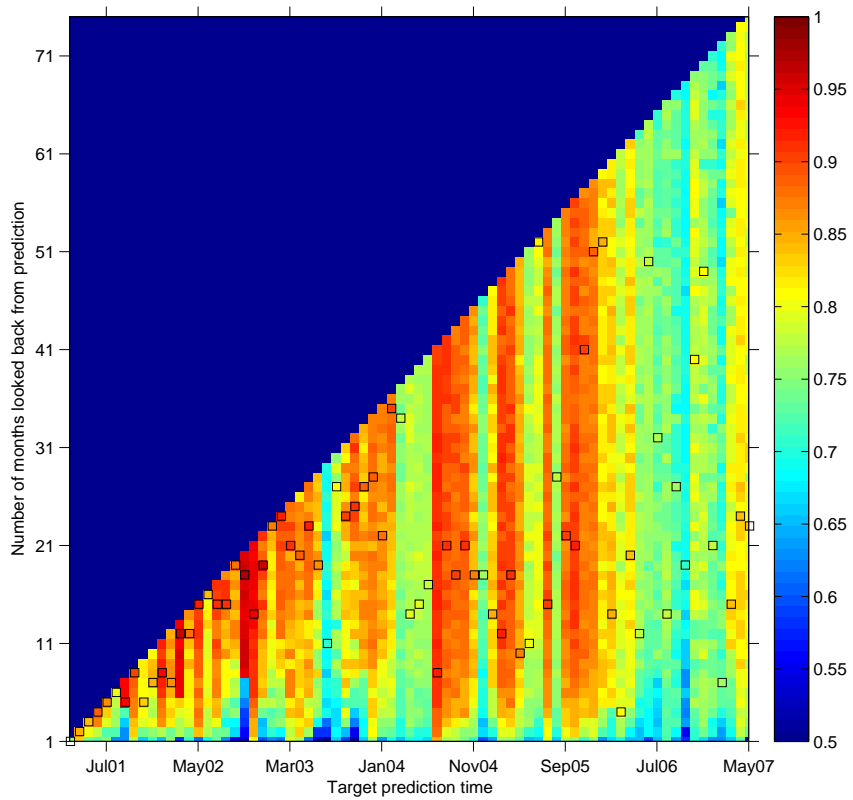


Figure 1.3: Netbeans heat-map: Prediction quality on same target using different training periods with the point of highest AUC highlighted

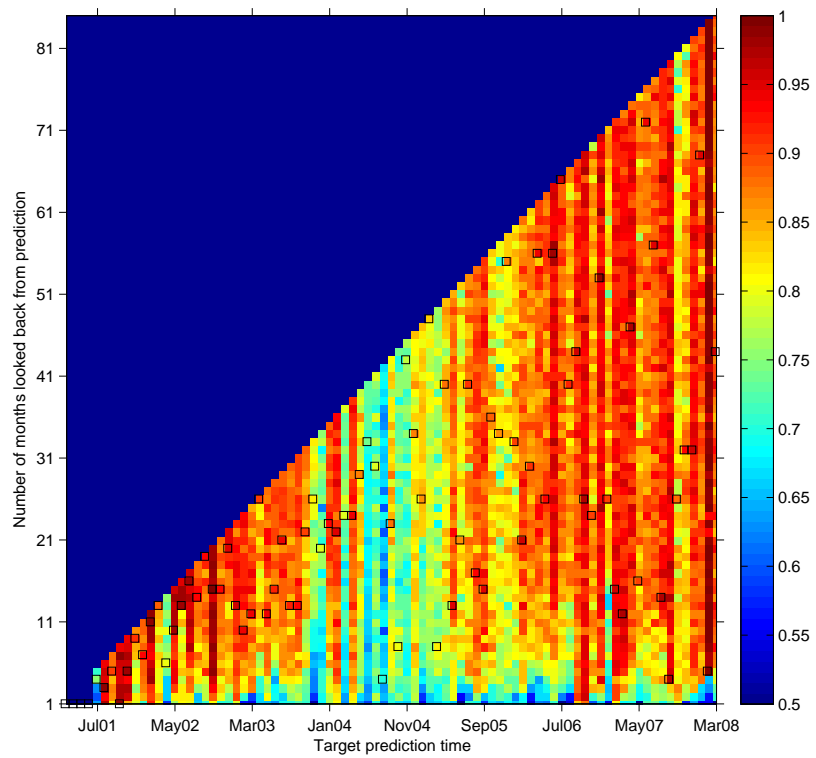


Figure 1.4: Open Office heat-map: Prediction quality on same target using different training periods with the point of highest AUC highlighted

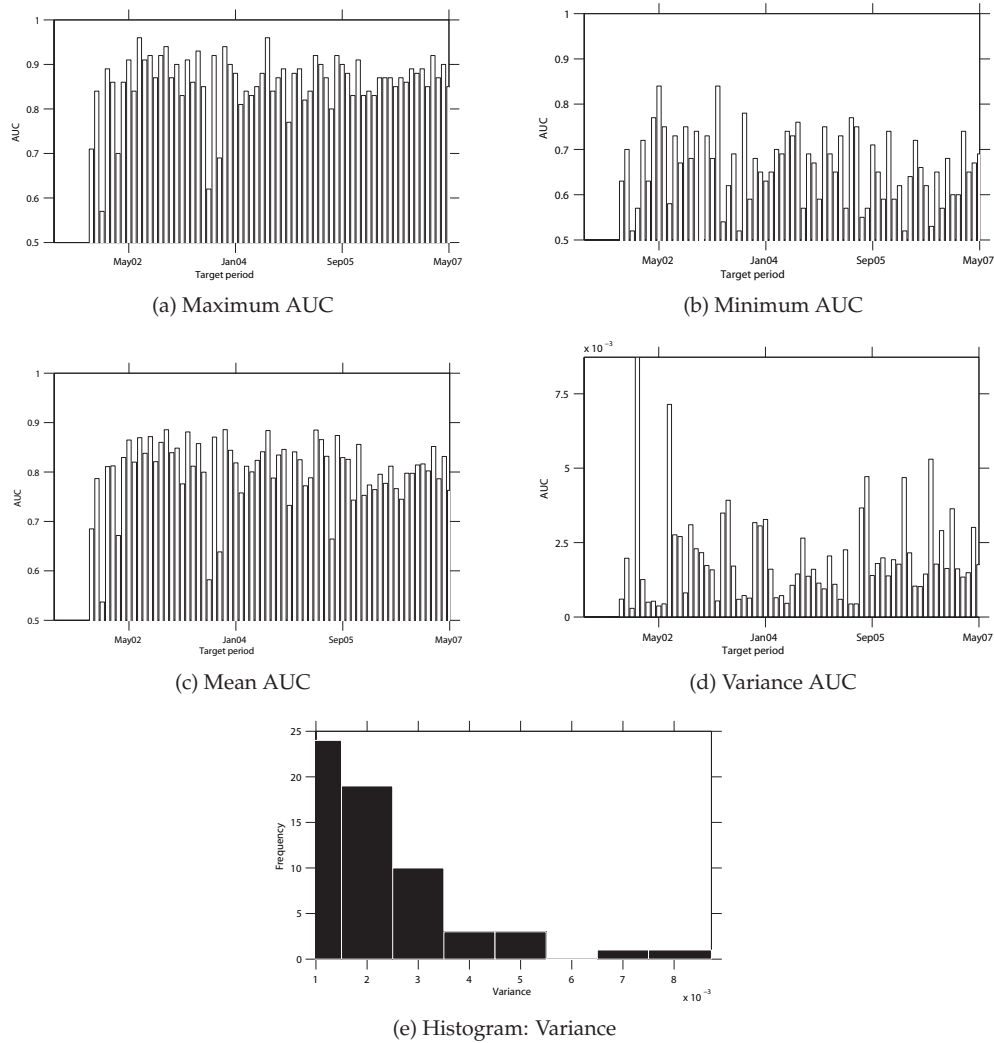


Figure 1.5: Descriptive statistics of AUC values in each column of the Eclipse heat-map (Figure 1.1)

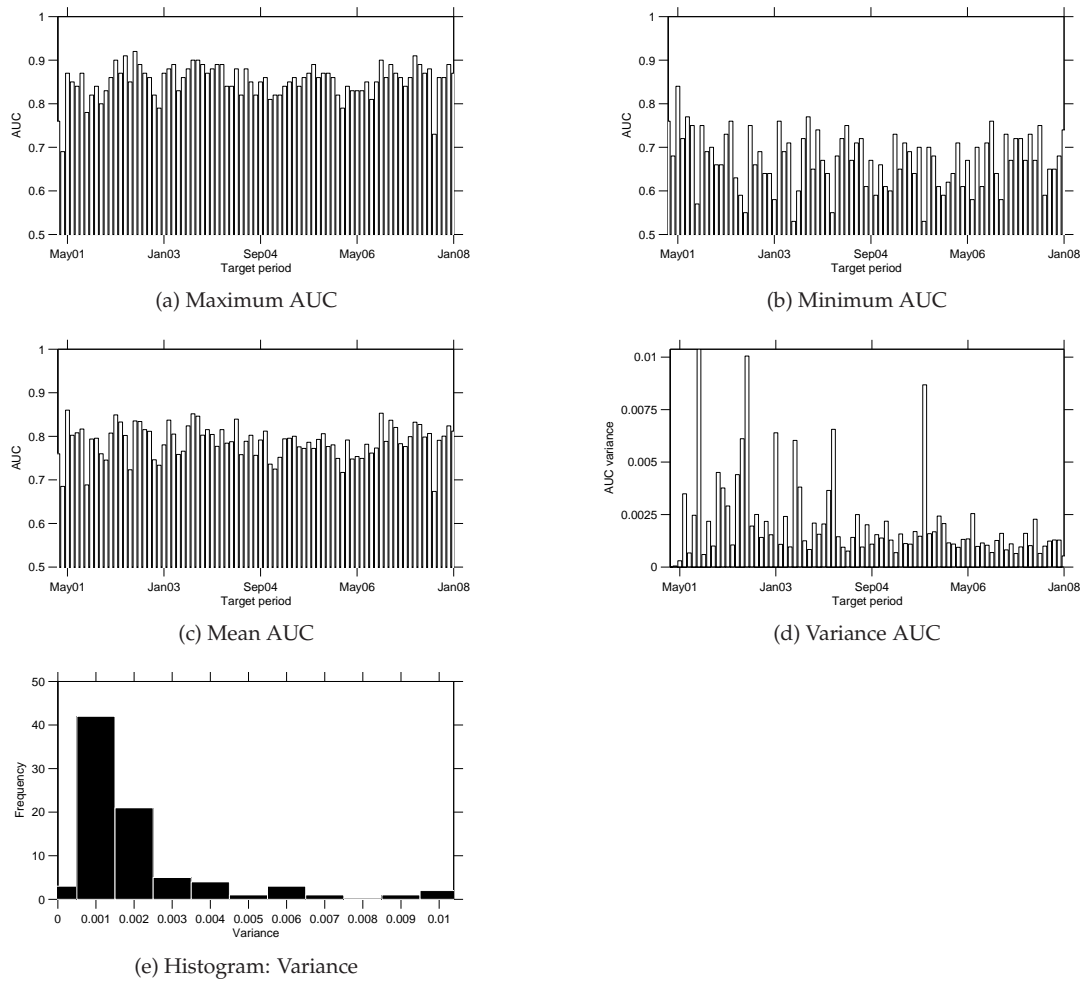


Figure 1.6: Descriptive statistics of AUC values in each column of the Mozilla heat-map (Figure 1.2)

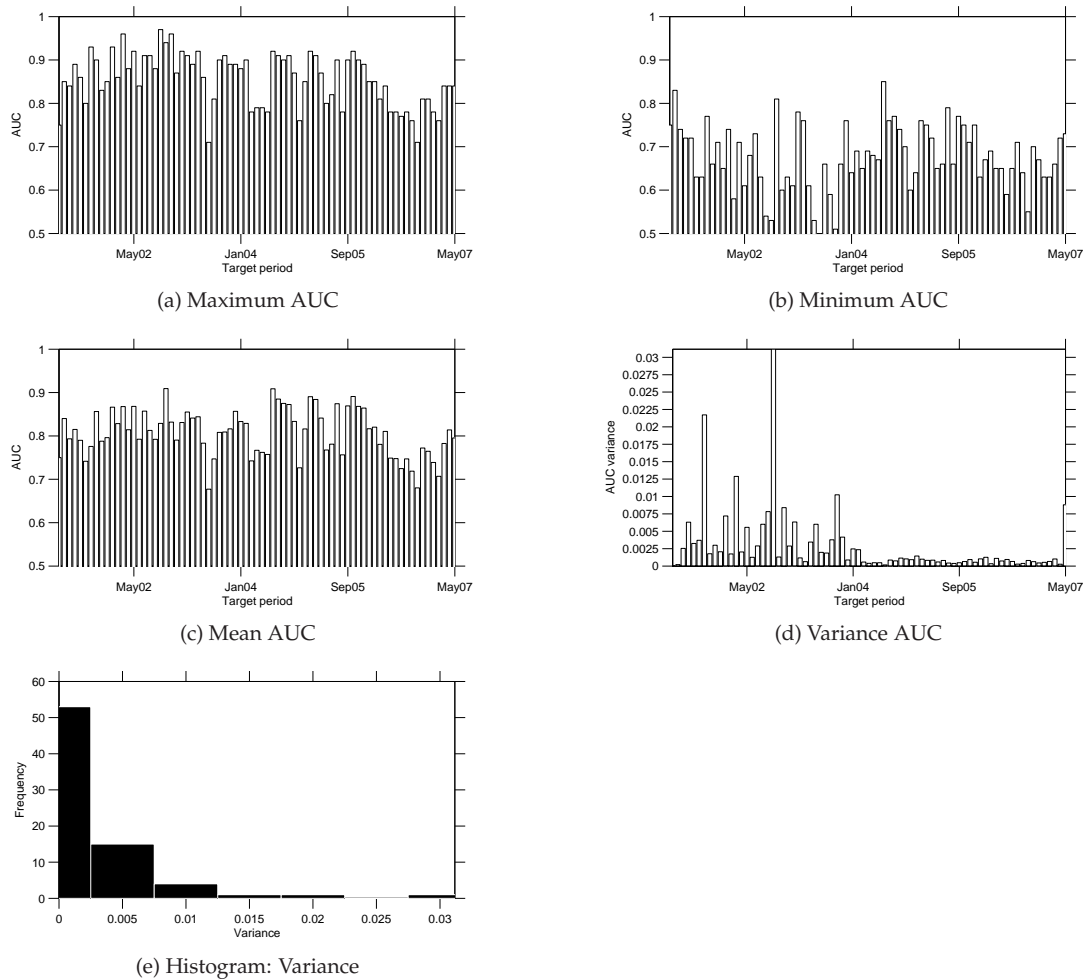


Figure 1.7: Descriptive statistics of AUC values in each column of the Netbeans heat-map (Figure 1.3)

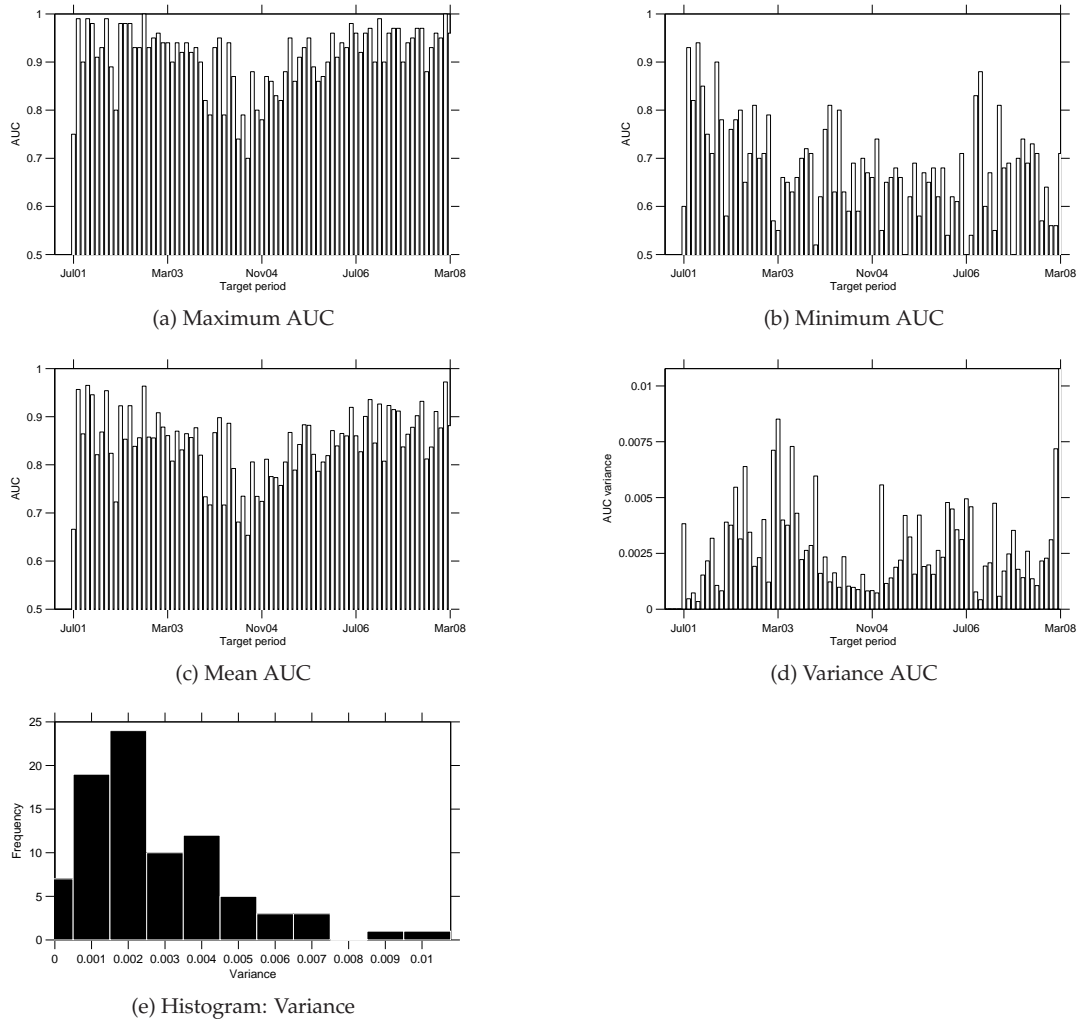


Figure 1.8: Descriptive statistics of AUC values in each column of the Open Office heat-map (Figure 1.4)

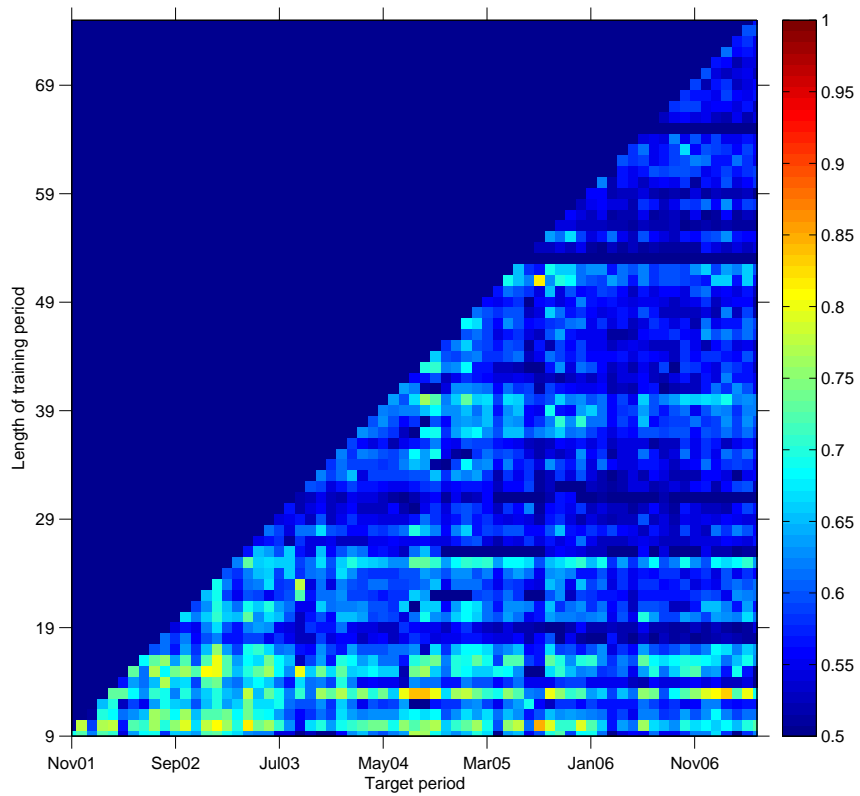


Figure 1.9: Eclipse heat-map: Prediction quality at different target periods

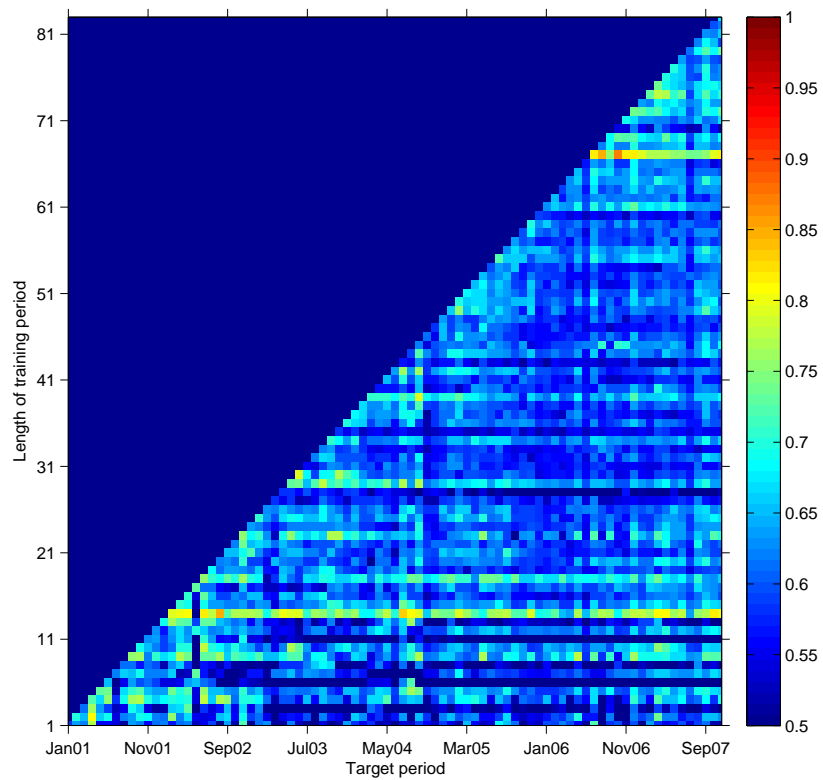


Figure 1.10: Mozilla heat-map: Prediction quality at different target periods

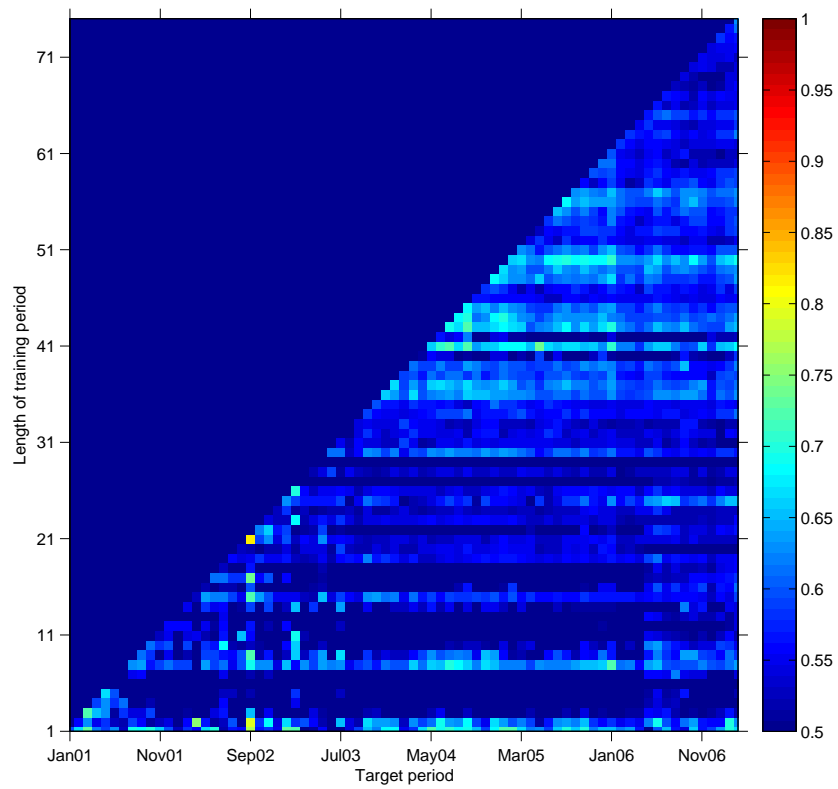


Figure 1.11: Netbeans heat-map: Prediction quality at different target periods

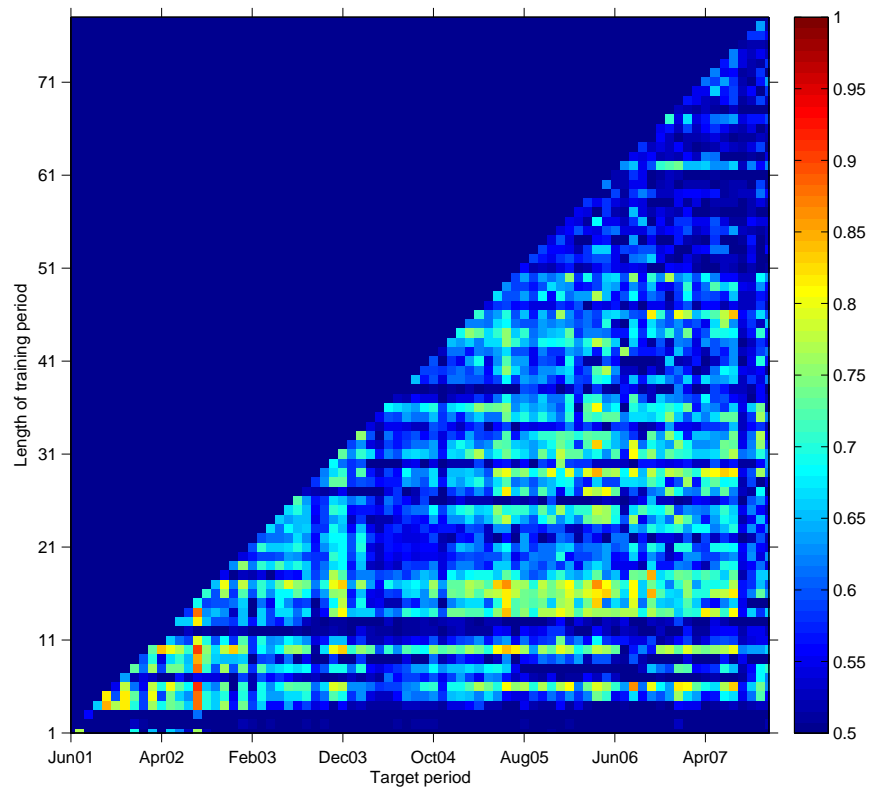


Figure 1.12: Open Office heat-map: Prediction quality at different target periods

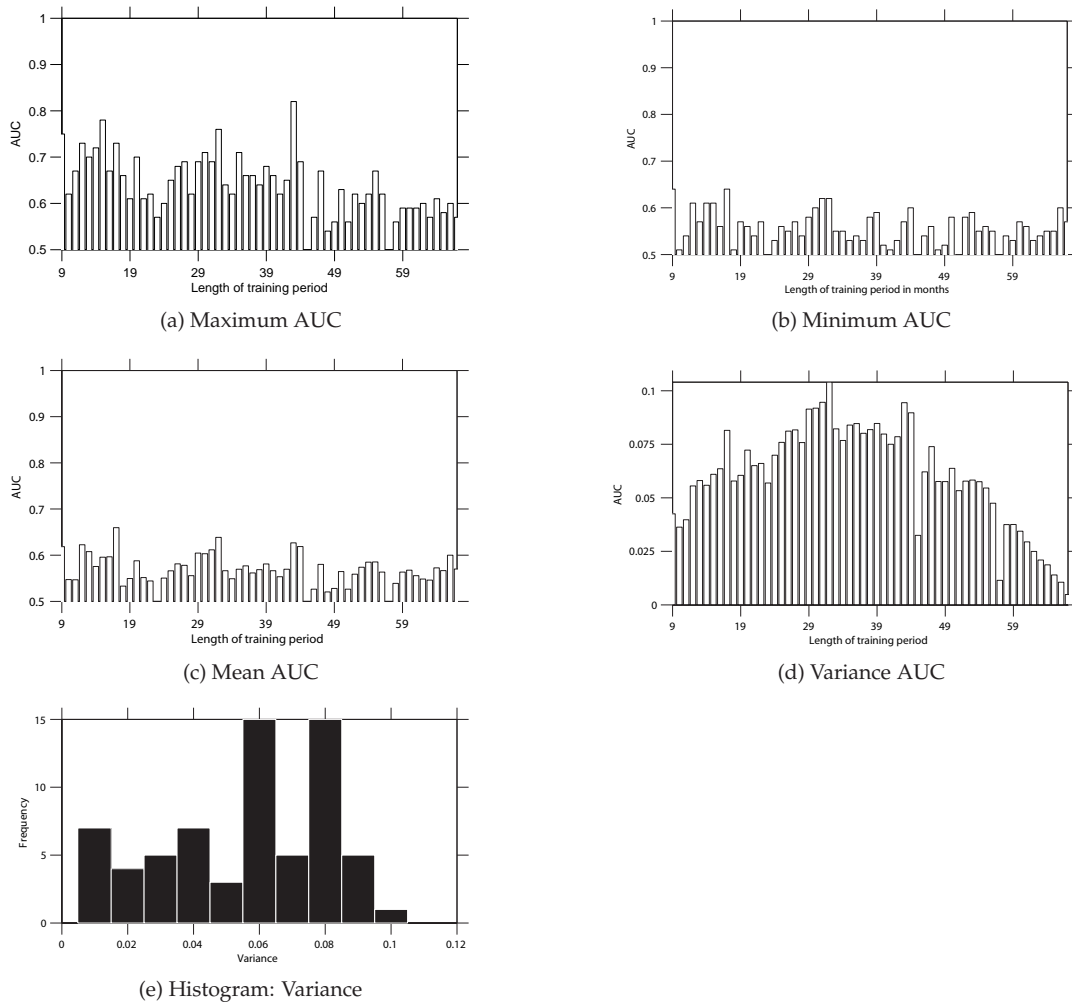


Figure 1.13: Descriptive statistics of AUC values in each row of the Eclipse heat-map (Figure 1.9)

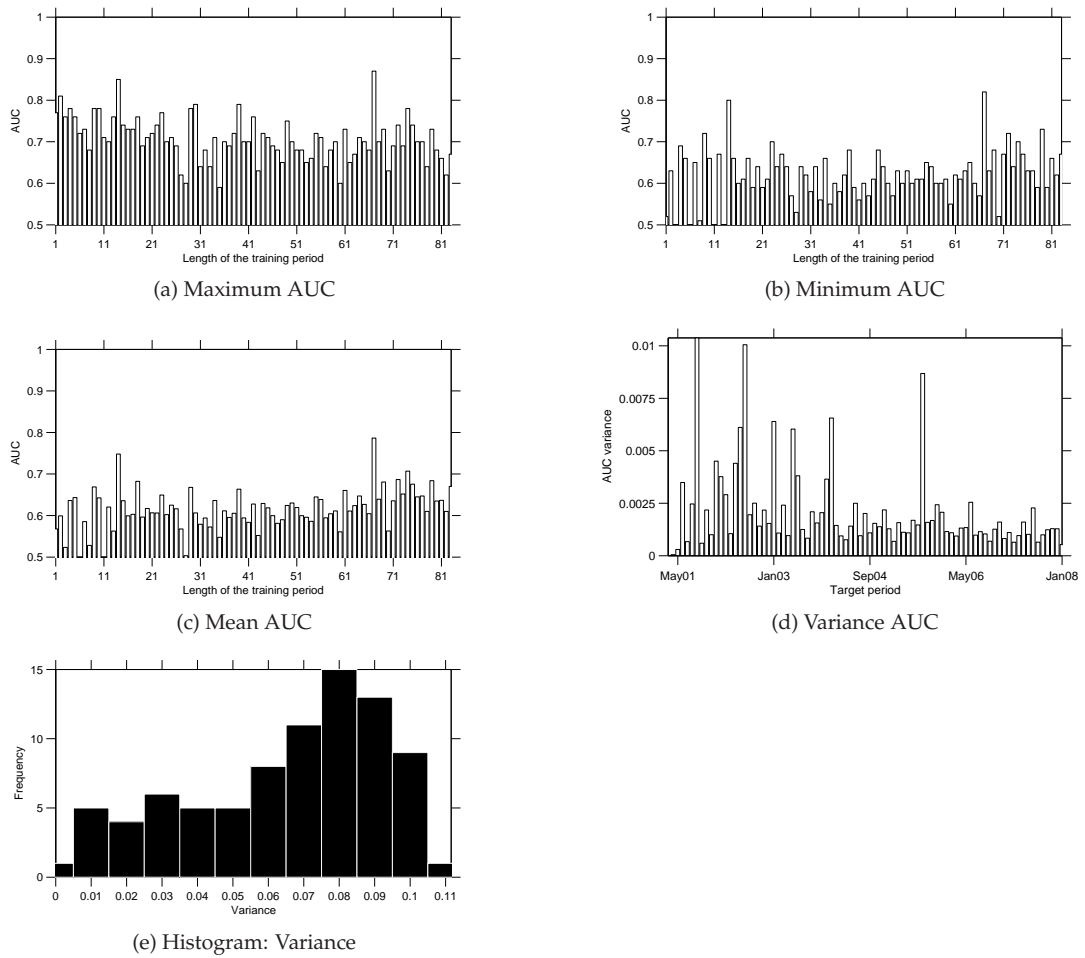


Figure 1.14: Descriptive statistics of AUC values in each row of the Mozilla heat-map (Figure 1.10)

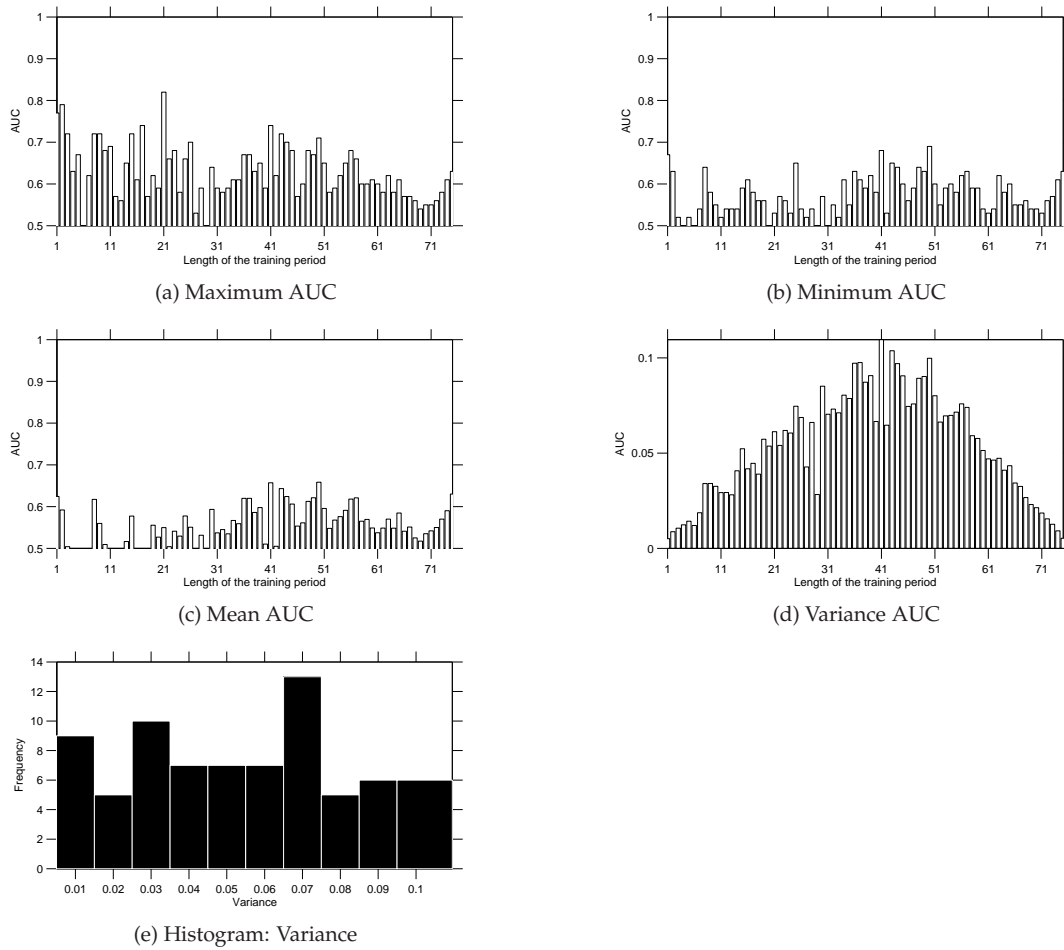


Figure 1.15: Descriptive statistics of AUC values in each row of the Netbeans heat-map (Figure 1.11)

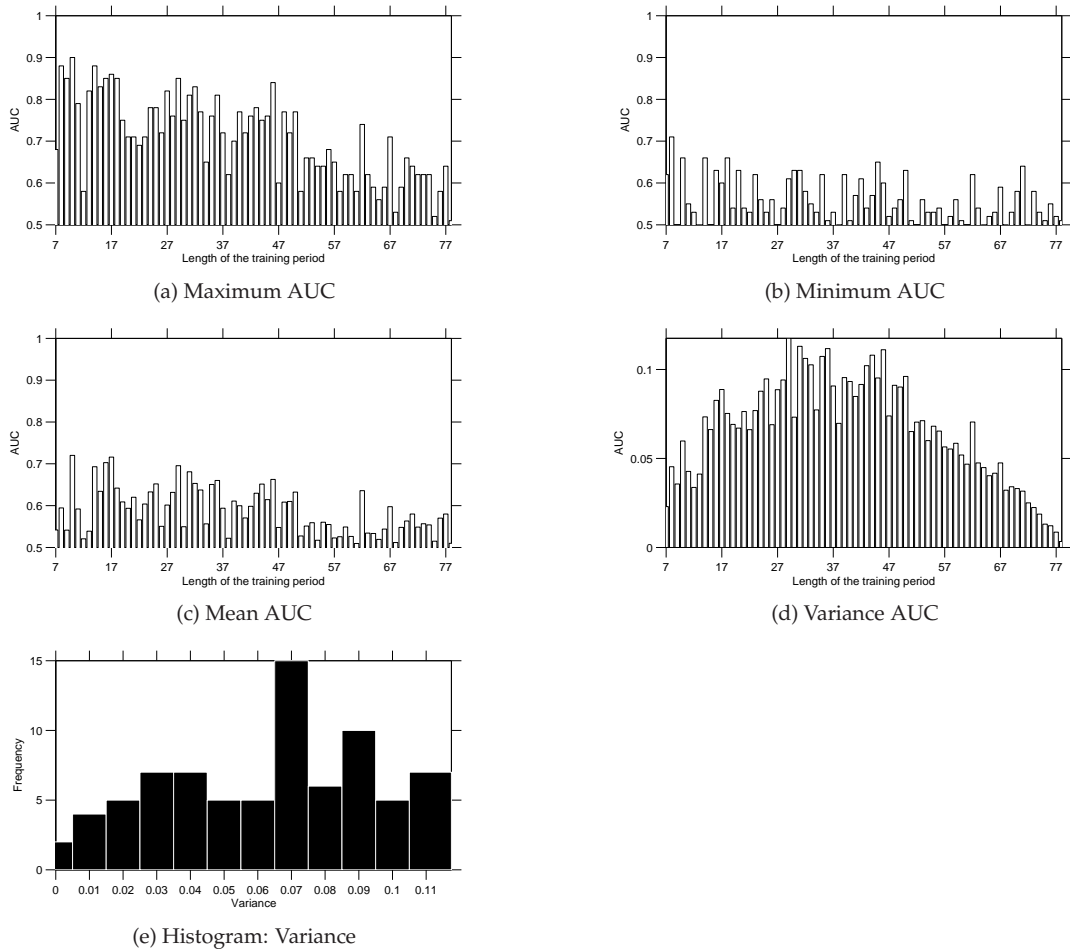


Figure 1.16: Descriptive statistics of AUC values in each row of the Open Office heat-map (Figure 1.12)